

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Supersedes date 31-Dec-2021

Revision date 07-Apr-2026

Revision Number 7.02

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s)	22255
Safety data sheet number	22255
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
EC Number	231-509-8
CAS No	10101-89-0
Synonyms	TRISODIUM PHOSPHATE HYDRATE (PHOSPRIL), TRISODIUM PHOSPHATE 12-HYDRATE FG E-339, TRISOD PHOS DODECAHYD, TRISODIUM PHOSPHATE 18/20% fine, TRISOD PHOS DODECAHYD PRAYPHOS, TRISODIUM ORTHOPHOSPHATE DODECAHYDRATE, TRISODIUM PHOSPHATE 12-HYDRATE FG FFA , type 18, TRISODODIUM PHOSPHATE DODECAHYDRATE FG, TSP 12H2O FG FFA CZ, PRAYPHOS TSP FG***
Pure substance/mixture	Substance

Contains PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Industrial application Process Additive Food industry Chemical intermediate Pharmaceuticals For further information, see attached Exposure Scenario
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1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address	SDS.EMEA@univarsolutions.com
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

Emergency Telephone	SGS - +32 (0)3 575 55 55 (24h)
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Specific target organ toxicity — single exposure	Category 3 - (H335)
Category 3 Respiratory irritation	

2.2. Label elements

Contains PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE

**Signal word**

Warning

Hazard statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Precautionary statements

P261 - Avoid breathing dust

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves and eye/face protection

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P312 - Call a POISON CENTER or doctor if you feel unwell

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
PHOSPHORIC ACID,TRISODIUM	90 - 100%	231-509-8	-	Eye Irrit. 2 (H319) Skin Irrit. 2 (H315)	-	-	-

SALT, DODECAHYDRATE 10101-89-0				STOT SE 3 (H335)			
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Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (UK REACH Article 59)

SECTION 4: First aid measures**4.1. Description of first aid measures**

General advice	Move victim to a safe isolated area. Show this safety data sheet to the doctor in attendance. Keep victim under observation. Never give anything by mouth to an unconscious person. If symptoms persist, call a doctor.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Get medical attention if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Get medical attention if symptoms occur.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

4.2. Most important symptoms and effects, both acute and delayed**Symptoms**

Inhalation	May cause respiratory irritation.
Eyes	Causes serious eye irritation.
Dermal	Causes skin irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical When heated and in case of fire, toxic vapours/gases may be formed.

Hazardous combustion products Carbon oxides.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid generation of dust.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Avoid generation of dust. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Clean contaminated objects and areas thoroughly observing environmental regulations.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Use personal protection recommended in Section 8. Avoid contact with eyes, skin and clothing. Do not breathe dust.

General hygiene considerations Avoid contact with skin, eyes or clothing. When using do not eat, drink or smoke. Remove contaminated clothing and protective equipment before entering eating areas. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standard.

7.3. Specific end use(s)**Specific use(s)**

See section 1 for more information.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure Limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers No information available

Chemical name	Oral	Dermal	Inhalation
PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE 10101-89-0			4.07 mg/m ³ [4] [6]

Derived No Effect Level (DNEL) - General Public No information available.

Chemical name	Oral	Dermal	Inhalation
PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE 10101-89-0			3.04 mg/m ³ [4] [6]

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls**Engineering controls**

No information available.

Personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.

Hand protection

Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.

Skin and body protection

Wear appropriate clothing to prevent reasonably probable skin contact.

Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Avoid contact with skin, eyes or clothing. When using do not eat, drink or smoke. Remove contaminated clothing and protective equipment before entering eating areas. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline solid Powder
Colour	Colourless
Odour	Odourless.
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	>= 75 °C	
Initial boiling point and boiling range		No information available.
Flammability		Not expected to form explosive dust-air mixtures.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point		Not applicable.
Autoignition temperature		No information available.
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)	11.5 - 12.5	solution (1.0 %).
Kinematic viscosity		No information available.
Dynamic viscosity		No information available.
Water solubility	Soluble in water 200 g/l @ 20 °C	
Solubility(ies)		No information available.
Partition coefficient		No information available.
Vapour pressure		No information available.
Relative density		No information available.
Bulk density	850 - 1000 kg/m ³	@ 20 °C
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	Not considered to be explosive.	
Oxidising properties	No information available	

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No known effects under normal use conditions.
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10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Excessive heat.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation May cause respiratory irritation.

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation.

Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 0.83 mg/l (Rat) 4h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes skin irritation.

PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE (10101-89-0)

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit				Causes skin irritation

Serious eye damage/eye irritation Causes serious eye irritation.

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit				Causes serious eye irritation Reverses within 21 days

Respiratory or skin sensitisation Based on available data the classification criteria are not met.

PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE (10101-89-0)

Method	Species	Exposure route	Results
	Mouse		Not a skin sensitiser

Germ cell mutagenicity Based on available data the classification criteria are not met.

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity Based on available data the classification criteria are not met.

STOT - single exposure May cause respiratory irritation.

PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE (10101-89-0)

Method	Species	Exposure route	Effective dose	Exposure time	Results
					May cause respiratory irritation

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard Based on available data the classification criteria are not met.

Other adverse effects No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Ecotoxicity The environmental impact of this product has not been fully investigated.

PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE (10101-89-0)

Method	Species	Endpoint type	Effective dose	Exposure time	Results
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OECD Test No. 203: Fish, Acute Toxicity Test	Oncorhynchus mykiss (rainbow trout)	LC50	> 100 mg/L	96 hours	
OECD Test No. 202: Daphnia sp., Acute Immobilisation Test	Daphnia magna	EC50	> 100 mg/L	48 hours	
OECD Test No. 201: Freshwater Algae and Cyanobacteria, Growth Inhibition Test	Desmodesmus subspicatus	EC50	> 100 mg/L	72 hours	

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

12.4. Mobility in soil

Mobility in soil Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE	The substance is not PBT / vPvB

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards No
14.6 Special precautions for user
Special Provisions None

IMDG

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	No
14.6 Special precautions for user	
Special Provisions	None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Authorisations and/or restrictions on use:**

This product does not contain substances subject to authorisation (UK REACH - Annex XIV).

This product does not contain substances subject to restriction (UK REACH - Annex XVII).

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA	- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL	- Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS	- Japan Existing and New Chemical Substances
IECSC	- China Inventory of Existing Chemical Substances
KECL	- Korean Existing and Evaluated Chemical Substances
PICCS	- Philippines Inventory of Chemicals and Chemical Substances
AIIC	- Australian Inventory of Industrial Chemicals
NZIoC	- New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend**

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		
Revision Note ***Indicates updated data since last publication			

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method

Acute aquatic toxicity
Chronic aquatic toxicity
Aspiration hazard
Ozone

Calculation method
Calculation method
Calculation method
Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Jitendra Panchal

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**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical
agents at work**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture Substance
REACH registration number 01-2119489800-32-XXXX
CAS No 10101-89-0
EC No (EU Index No) 231-509-8
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Manufacture of substance
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC1 - Manufacture of substances ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) ERC2 - Formulation of preparations (mixtures)

Specific Environmental Release Category ESVOC SpERC 4.4a.v1 ESVOC SpERC 6.1a.v1 ESVOC SpERC 2.2.v1
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC26 - Handling of solid inorganic substances at ambient temperature

Product Name PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC1 - Manufacture of substances
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
 - ERC2 - Formulation of preparations (mixtures)
Specific Environmental Release Category - ESVOC SpERC 4.4a.v1
 - ESVOC SpERC 6.1a.v1
 - ESVOC SpERC 2.2.v1

Covers concentrations up to 100%
Amounts used

Type	Msafe
Value	5000
Units	kg/d

Product characteristics

Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C

Other operational conditions of use affecting environmental exposure

Release fraction to air from process (initial release prior to RMM)	0.3
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Removal efficiency (total)	87.36%
Sludge treatment	Controlled application to agricultural soil

Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18,000 m3/d
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Control measures to prevent releases

Water	Ensure all waste water is collected and treated via a WWTP
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Conditions and measures related to external recovery of waste

Method	External recovery and recycling of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 90%
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented

Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a basic standard of general ventilation (1 to 3 air changes per hour) Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	5%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) or Ensure operation is undertaken outdoors
Conditions and measures related to personal protection, hygiene and health evaluation	Wear a respirator providing a minimum efficiency of 95% Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Covers indoor and outdoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a basic standard of general ventilation (1 to 3 air changes per hour) Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and	Wear a respirator providing a minimum efficiency of 95% Wear suitable gloves tested to EN 374 Efficiency of at least 80%

health evaluation	
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a basic standard of general ventilation (1 to 3 air changes per hour) Local exhaust ventilation - efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374 Efficiency of at least 80%
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	5%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Exposure duration	Avoid carrying out activities involving exposure for more than 1 hour
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 90%
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Vapour pressure	20.79 hPa
Temperature associated to vapour pressure	25 C
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves tested to EN 374 Efficiency of at least 80% Wear a respirator providing a minimum efficiency of 90%

health evaluation	
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC1 - Manufacture of substances

- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

- ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

- ERC2 - Formulation of preparations (mixtures)

Specific Environmental Release Category - ESVOC SpERC 4.4a.v1

- ESVOC SpERC 6.1a.v1

- ESVOC SpERC 2.2.v1

Predicted No Effect Concentration (PNEC)

Freshwater	3.058 mg/l
Freshwater sediment	11.36 mg/kg
Marine water	0.3058 mg/l
Marine sediment	1.136 mg/kg
Soil	0.478 mg/kg
Impact on Sewage Treatment	85 mg/l

Calculation method

Used EUSES model

Remarks

Risk from environmental exposure is driven by freshwater Risk from environmental exposure is driven by soil

Environment	predicted exposure level	Risk characterisation ratio (RCR)
STP: Sewage Treatment Plant		0.009
Freshwater sediment		0.06
Freshwater		0.06
Marine sediment		0.056
Marine water		0.056
Soil		0.022

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - local	25 mg/m ³
Worker - inhalative, long-term - systemic	4.07 mg/m ³
Worker - inhalative, short-term - local	25 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

MEASE

Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - local		0.150
PROC2 - Use in closed, continuous process with occasional controlled	Worker - inhalative, short-term - local		0.600

exposure			
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - local		0.014
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, short-term - local		0.280
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - local		0.120
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - dermal, short-term - local		0.801
PROC7 - Industrial spraying	Worker - inhalative, long-term - local		0.035
PROC7 - Industrial spraying	Worker - inhalative, short-term - local		0.701
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - local		0.010
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, short-term - local		0.200
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - local		0.025
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, short-term - local		0.500
PROC10 - Roller application or brushing	Worker - inhalative, long-term - local		0.014
PROC10 - Roller application or brushing	Worker - inhalative, short-term - local		0.280
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - local		0.050
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, short-term - local		0.200

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Formulation & (re)packing of substances and mixtures Various Product category(ies)
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC2 - Formulation of preparations (mixtures)
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC15 - Use as laboratory reagent PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC8 - Biocidal Products (e.g. disinfectants, pest control) PC9a - Coatings and paints, thinners, paint removers PC12 - Fertilisers PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products PC16 - Heat transfer fluids PC17 - Hydraulic fluids PC18 - Ink and toners PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC23 - Leather tanning, dye, finishing, impregnation and care products PC24 - Lubricants, greases, release products PC25 - Metal working fluids PC26 - Paper and board dye, finishing and impregnation products; including bleaches and other processing aids PC27 - Plant protection products PC32 - Polymer preparations and compounds PC34 - Textile dyes, finishing and impregnating products PC35 - Washing and cleaning products (including solvent based products) PC36 - Water softeners PC37 - Water treatment chemicals PC39 - Cosmetics, personal care products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to
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	vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Assumes process temperature up to	40 C
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Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed

	Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs

exposure	followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.007 mg/m ³	< 0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01

PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Formulation & (re)packing of substances and mixtures Various Product category(ies)
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC3 - Formulation in materials
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay PC12 - Fertilisers PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products PC16 - Heat transfer fluids PC17 - Hydraulic fluids PC18 - Ink and toners PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC23 - Leather tanning, dye, finishing, impregnation and care products PC24 - Lubricants, greases, release products PC25 - Metal working fluids PC26 - Paper and board dye, finishing and impregnation products; including bleaches and other processing aids PC34 - Textile dyes, finishing and impregnating products PC35 - Washing and cleaning products (including solvent based products) PC36 - Water softeners PC37 - Water treatment chemicals PC39 - Cosmetics, personal care products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC3 - Formulation in materials

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Clear spills immediately

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
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Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC3 - Formulation in materials

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise

indicated MEASE			
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.007 mg/m ³	< 0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.1 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01

PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101
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Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Washing and cleaning products Other
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available
Product category(ies)	PC35 - Washing and cleaning products (including solvent based products)
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU0 - Other SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed

	Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to	Wear suitable gloves (tested to EN 374) and eye protection

personal protection, hygiene and health evaluation	Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to	Wear suitable gloves (tested to EN 374) and eye protection

personal protection, hygiene and health evaluation	Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to	Wear suitable gloves (tested to EN 374) and eye protection

personal protection, hygiene and health evaluation	Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1 mg/m ³	0.056
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging)	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01

from/to vessels/large containers at dedicated facilities			
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Washing and cleaning products Other
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available PC35 - Washing and cleaning products (including solvent based products)
Product category(ies)	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Product Name	
Sector(s) of use	SU0 - Other SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
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Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g.

	spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%

Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.1 mg/m ³	< 0.01
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC10 - Roller application or	Worker - inhalative, long-term	0.7 mg/m ³	0.039

brushing	- systemic		
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Washing and cleaning products
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d - Wide dispersive outdoor use of processing aids in open systems
Product category(ies)	PC35 - Washing and cleaning products (including solvent based products)
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Covers concentrations up to	0.5%
Amounts used	30 g/event
Exposure duration	0.2 hr/event
Use frequency	1 events per day

Product categories [PC]	PC35 - Washing and cleaning products (including solvent based products)
Covers concentrations up to	0.5%
Amounts used	8 g/event
Exposure duration	0.1 hr/event
Use frequency	1 events per day

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d - Wide dispersive outdoor use of processing aids in open systems

Predicted No Effect Concentration
(PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC35 - Washing and cleaning products (including solvent based products)	Consumer - inhalative, long-term - systemic	6.696 mg/m ³	0.874
PC35 - Washing and cleaning products (including solvent based products)	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC35 - Washing and cleaning products (including solvent based products)	Consumer - combined, long-term - systemic		0.874
PC35 - Washing and cleaning products (including solvent based products)	Consumer - inhalative, long-term - systemic	1.887 mg/m ³	0.246
PC35 - Washing and cleaning products (including solvent based products)	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC35 - Washing and cleaning products (including solvent based products)	Consumer - combined, long-term - systemic		0.246

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC5 - Industrial use resulting in inclusion into or onto a matrix
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC19 - Hand-mixing with intimate contact and only PPE available PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC9b - Fillers, putties, plasters, modelling clay PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU13 - Manufacture of other non-metallic mineral products SU19 - Building and construction work

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
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Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
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Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1 mg/m ³	0.056
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01

weighing)			
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC19 - Hand-mixing with intimate contact and only PPE available PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC9b - Fillers, putties, plasters, modelling clay PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC32 - Polymer preparations and compounds
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU13 - Manufacture of other non-metallic mineral products SU19 - Building and construction work SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

control dispersion from source towards the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
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Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
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Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³

Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.1 mg/m ³	< 0.01
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC14 - Production of preparations or articles by tableting, compression,	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196

extrusion, pelettising			
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature	Worker - inhalative, long-term - systemic	0.21 mg/m ³	0.012
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Stone, plaster, cement, glass and ceramic articles
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC12a - Industrial processing of articles with abrasive techniques (low release)
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Article categories	AC4 - Stone, plaster, cement, glass and ceramic articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC12a - Industrial processing of articles with abrasive techniques (low release)

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 90% Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g.

	spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC12a - Industrial processing of articles with abrasive techniques (low release)

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC21 - Low energy manipulation of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Stone, plaster, cement, glass and ceramic articles
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Article categories	AC4 - Stone, plaster, cement, glass and ceramic articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release

- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³

Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC21 - Low energy manipulation of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.21 mg/m ³	0.012

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Stone, plaster, cement, glass and ceramic articles
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Article categories	AC4 - Stone, plaster, cement, glass and ceramic articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Article categories	AC4 - Stone, plaster, cement, glass and ceramic articles
Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day

Section 3 - Exposure estimation

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
AC4 - Stone, plaster, cement, glass and ceramic articles	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
AC4 - Stone, plaster, cement, glass and ceramic articles	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
AC4 - Stone, plaster, cement, glass and ceramic articles	Consumer - combined, long-term - systemic		< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU14 - Manufacture of basic metals, including alloys SU15 - Manufacture of fabricated metal products, except machinery and equipment SU17 - General manufacturing

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs

exposure	followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent	Ensure operatives are trained to minimise exposures

/limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent	Ensure operatives are trained to minimise exposures

/limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1.66 mg/m ³	0.093
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC5 - Industrial use resulting in inclusion into or onto a matrix
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU14 - Manufacture of basic metals, including alloys SU15 - Manufacture of fabricated metal products, except machinery and equipment SU17 - General manufacturing

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Local exhaust ventilation - efficiency of at least 80% Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines

	Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed

	Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed

	Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic
Consumer - inhalative, long-term - systemic

4.07 mg/m³
3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1.66 mg/m ³	0.093
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU14 - Manufacture of basic metals, including alloys SU15 - Manufacture of fabricated metal products, except machinery and equipment SU17 - General manufacturing SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

control dispersion from source towards the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging)	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01

from/to vessels/large containers at non dedicated facilities			
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	5 mg/m ³	0.28
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC14 - Metal surface treatment products, including galvanic and electroplating products PC15 - Non-metal-surface treatment products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU14 - Manufacture of basic metals, including alloys SU15 - Manufacture of fabricated metal products, except machinery and equipment SU17 - General manufacturing SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

control dispersion from source towards the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear a respirator conforming to EN 140 with Type A filter or better See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
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Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or	Worker - inhalative, long-term	0.05 mg/m ³	< 0.01

preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	- systemic		
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture Substance
REACH registration number 01-2119489800-32-XXXX
CAS No 10101-89-0
EC No (EU Index No) 231-509-8
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Various Product category(ies) Various Sector(s) of use
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC7 - Industrial use of substances in closed systems
Process category(ies) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC10 - Roller application or brushing
 PROC13 - Treatment of articles by dipping and pouring
 PROC17 - Lubrication at high energy conditions and in partly open process
 PROC19 - Hand-mixing with intimate contact and only PPE available
 PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting
 PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
 PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
 PROC25 - Other hot work operations with metals
Product category(ies) PC16 - Heat transfer fluids PC17 - Hydraulic fluids PC24 - Lubricants, greases, release products PC25 - Metal working fluids
Product Name PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU14 - Manufacture of basic metals, including alloys SU15 - Manufacture of fabricated metal products, except machinery and equipment SU17 - General manufacturing

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems

Amounts used

Type	Daily amount per site
Value	<= 30000
Units	kg/d

Type	Annual amount per site
Value	<= 3000

Units	t(ons)/year
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Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
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Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Assumes process temperature up to	40 C
Process category(ies)	PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C
Process category(ies)	PROC25 - Other hot work operations with metals
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC7 - Industrial use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	1 mg/m ³	0.056
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	0.083 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.14 mg/m ³	< 0.01
PROC25 - Other hot work operations with metals	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to

define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems ERC9a - Wide dispersive indoor use of substances in closed systems
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC15 - Use as laboratory reagent PROC17 - Lubrication at high energy conditions and in partly open process PROC19 - Hand-mixing with intimate contact and only PPE available PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles PROC25 - Other hot work operations with metals
Product category(ies)	PC16 - Heat transfer fluids PC17 - Hydraulic fluids PC24 - Lubricants, greases, release products PC25 - Metal working fluids
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU14 - Manufacture of basic metals, including alloys SU15 - Manufacture of fabricated metal products, except machinery and equipment SU17 - General manufacturing SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
- ERC9a - Wide dispersive indoor use of substances in closed systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%

Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC17 - Lubrication at high energy conditions and in partly open process
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC25 - Other hot work operations with metals
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems
- ERC9a - Wide dispersive indoor use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
 MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01

dedicated facilities			
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	7 mg/m ³	0.392
PROC17 - Lubrication at high energy conditions and in partly open process	Worker - inhalative, long-term - systemic	1 mg/m ³	0.056
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC22 - Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature	Worker - inhalative, long-term - systemic	0.21 mg/m ³	0.012
PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.21 mg/m ³	0.012
PROC25 - Other hot work operations with metals	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Manufacture of textiles, leather, fur
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC5 - Industrial use resulting in inclusion into or onto a matrix
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC6 - Calendaring operations PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available
Product category(ies)	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC23 - Leather tanning, dye, finishing, impregnation and care products PC26 - Paper and board dye, finishing and impregnation products; including bleaches and other processing aids PC34 - Textile dyes, finishing and impregnating products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU5 - Manufacture of textiles, leather, fur

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC6 - Calendaring operations
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent	Ensure operatives are trained to minimise exposures

/limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g.

	spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098

PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC6 - Calendaring operations	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1 mg/m ³	0.056
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC6 - Calendaring operations PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC10 - Roller application or brushing PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring PROC19 - Hand-mixing with intimate contact and only PPE available
Product category(ies)	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC23 - Leather tanning, dye, finishing, impregnation and care products PC26 - Paper and board dye, finishing and impregnation products; including bleaches and other processing aids PC34 - Textile dyes, finishing and impregnating products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU5 - Manufacture of textiles, leather, fur SU6b - Manufacture of pulp, paper and paper products SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%

Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC6 - Calendaring operations
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to	Wear suitable gloves (tested to EN 374) and eye protection

personal protection, hygiene and health evaluation	Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

control dispersion from source towards the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.1 mg/m ³	< 0.01
PROC6 - Calendaring operations	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196

PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Various Article categories
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC12a - Industrial processing of articles with abrasive techniques (low release)
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Article categories	AC5 - Fabrics, textiles and apparel AC6 - Leather articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC12a - Industrial processing of articles with abrasive techniques (low release)

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 90% Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g.

	spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC12a - Industrial processing of articles with abrasive techniques (low release)

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC21 - Low energy manipulation of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Various Article categories
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Article categories	AC5 - Fabrics, textiles and apparel AC6 - Leather articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release

- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC21 - Low energy manipulation of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.21 mg/m ³	0.012

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Various Article categories
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Article categories	AC5 - Fabrics, textiles and apparel AC6 - Leather articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Article categories	AC5 - Fabrics, textiles and apparel
Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day

Article categories	AC6 - Leather articles
Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day

Section 3 - Exposure estimation

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release

- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Predicted No Effect Concentration
(PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³

Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC5 - Artists supply and hobby preparations	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC5 - Artists supply and hobby preparations	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC5 - Artists supply and hobby preparations	Consumer - combined, long-term - systemic		< 0.01
PC6 - Automotive Care Products	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC6 - Automotive Care Products	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC6 - Automotive Care Products	Consumer - combined, long-term - systemic		< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
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E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Various Sector(s) of use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC5 - Industrial use resulting in inclusion into or onto a matrix
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC7 - Industrial spraying PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10 - Roller application or brushing PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay PC18 - Ink and toners PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC32 - Polymer preparations and compounds
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU6a - Manufacture of wood and wood products SU6b - Manufacture of pulp, paper and paper products SU12 - Manufacture of plastics products, including compounding and conversion

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or	18000 m3/d
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marine)	
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC7 - Industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required

health evaluation	during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC10 - Roller application or brushing
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC7 - Industrial spraying	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or	Worker - inhalative, long-term	0.01 mg/m ³	< 0.01

preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	- systemic		
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies)
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Product category(ies)	PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Product categories [PC]	PC9a - Coatings and paints, thinners, paint removers
Covers concentrations up to	10%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day
Risk management measures	No Spraying

Product categories [PC]	PC9b - Fillers, putties, plasters, modelling clay
Covers concentrations up to	10%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day
Risk management measures	No Spraying

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC9a - Coatings and paints, thinners, paint removers	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC9a - Coatings and paints, thinners, paint removers	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC9a - Coatings and paints, thinners, paint removers	Consumer - combined, long-term - systemic		< 0.01
PC9b - Fillers, putties, plasters, modelling clay	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC9b - Fillers, putties, plasters, modelling clay	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC9b - Fillers, putties, plasters, modelling clay	Consumer - combined, long-term - systemic		< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Various Article categories
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC12a - Industrial processing of articles with abrasive techniques (low release)
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Article categories	AC7 - Metal articles AC8 - Paper articles AC13 - Plastic articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC12a - Industrial processing of articles with abrasive techniques (low release)

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 90% Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g.

	spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC12a - Industrial processing of articles with abrasive techniques (low release)

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC21 - Low energy manipulation of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Various Article categories
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Article categories	AC7 - Metal articles AC8 - Paper articles AC13 - Plastic articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC21 - Low energy manipulation of substances bound in materials and/or articles
Covers concentrations up to	100%
Physical form of product	Solid, low dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release

- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC21 - Low energy manipulation of substances bound in materials and/or articles	Worker - inhalative, long-term - systemic	0.21 mg/m ³	0.012

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Service life - workers: Various Article categories
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Article categories	AC7 - Metal articles AC8 - Paper articles AC13 - Plastic articles
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Article categories	AC7 - Metal articles
Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day

Article categories	AC8 - Paper articles
Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day

Article categories	AC13 - Plastic articles
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Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day

Section 3 - Exposure estimation

Environmental release category(ies) - ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release

- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³

Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC7 - Base metals and alloys	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC7 - Base metals and alloys	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC7 - Base metals and alloys	Consumer - combined, long-term - systemic		< 0.01
PC8 - Biocidal Products (e.g. disinfectants, pest control)	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC8 - Biocidal Products (e.g. disinfectants, pest control)	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC8 - Biocidal Products (e.g. disinfectants, pest control)	Consumer - combined, long-term - systemic		< 0.01
PC13 - Fuels	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC13 - Fuels	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC13 - Fuels	Consumer - combined, long-term - systemic		< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Fertilisers Various Sector(s) of use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15 - Use as laboratory reagent PROC26 - Handling of solid inorganic substances at ambient temperature PROC28 - Manual maintenance (cleaning and repair) of machinery
Product category(ies)	PC12 - Fertilisers
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 - Manufacture of fine chemicals

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines

	Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines

	Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed

	Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required

health evaluation	during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC28 - Manual maintenance (cleaning and repair) of machinery
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required

health evaluation	during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.007 mg/m ³	< 0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch	Worker - inhalative, long-term	0.042 mg/m ³	< 0.01

processes for formulation of preparations and articles (multi-stage and/or significant contact)	- systemic		
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101
PROC28 - Manual maintenance (cleaning and repair) of machinery	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Products such as pH-regulators, flocculants, precipitants, neutralisation agents Various Sector(s) of use
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 - Manufacture of fine chemicals

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed

	Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs

exposure	followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment

Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.007 mg/m ³	< 0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01

for exposure arises			
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture Substance
REACH registration number 01-2119489800-32-XXXX
CAS No 10101-89-0
EC No (EU Index No) 231-509-8
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Products such as pH-regulators, flocculants, precipitants, neutralisation agents Various
Type Sector(s) of use
 Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC6b - Industrial use of reactive processing aids
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles
 (multi-stage and/or significant contact)
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large
 containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line,
 including weighing)
 PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies) PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
Product Name PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU8
 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9 -
 Manufacture of fine chemicals

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines

	Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs

exposure	followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required

health evaluation	during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately

the worker	Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.007 mg/m ³	< 0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC5 - Mixing or blending in batch processes for formulation of	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098

preparations and articles (multi-stage and/or significant contact)			
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.042 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.008 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Electricity, steam, gas water supply and sewage treatment
Type	Worker
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies)	ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC36 - Water softeners PC37 - Water treatment chemicals
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU23 - Recycling

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Environmental factors not influenced by risk management

Receiving water dilution (fresh or marine)	18000 m3/d
Local freshwater dilution factor	9

Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%

Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
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Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Handle in a fume cupboard or under extract ventilation Efficiency of at least 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor

Assumes process temperature up to	40 C
Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Clear spills immediately Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed Regular inspection and maintenance of equipment and machines Clean equipment and the work area every day

Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.007 mg/m ³	< 0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.07 mg/m ³	< 0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	0.001 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.875 mg/m ³	0.049
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	1.75 mg/m ³	0.098
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	1.8 mg/m ³	0.101

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to

define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Various Product category(ies) Electricity, steam, gas water supply and sewage treatment
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product category(ies)	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC36 - Water softeners PC37 - Water treatment chemicals
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU22 - Professional uses SU23 - Recycling

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8d - Wide dispersive outdoor use of processing aids in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required

health evaluation	during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8b - Transfer of substance or	Worker - inhalative, long-term	0.05 mg/m ³	< 0.01

preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	- systemic		
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	5 mg/m ³	0.28
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Laboratory chemicals Manufacture of fine chemicals
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8b - Wide dispersive indoor use of reactive substances in open systems
Process category(ies)	PROC15 - Use as laboratory reagent
Product category(ies)	PC21 - Laboratory chemicals
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU9 - Manufacture of fine chemicals SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8b - Wide dispersive indoor use of reactive substances in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure	
Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8b - Wide dispersive indoor use of reactive substances in open systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated
MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.35 mg/m ³	0.02
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Cosmetics, personal care products
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8a - Wide dispersive indoor use of processing aids in open systems
Product category(ies)	PC39 - Cosmetics, personal care products
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Product categories [PC]	PC39 - Cosmetics, personal care products
Covers concentrations up to	10%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day
Risk management measures	No Spraying

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC39 - Cosmetics, personal care products	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC39 - Cosmetics, personal care products	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC39 - Cosmetics, personal care products	Consumer - combined, long-term - systemic		< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Professional use
Type	Worker
Main user group	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies)	ERC8b - Wide dispersive indoor use of reactive substances in open systems ERC8e - Wide dispersive outdoor use of reactive substances in open systems
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC11 - Non industrial spraying PROC15 - Use as laboratory reagent PROC19 - Hand-mixing with intimate contact and only PPE available PROC26 - Handling of solid inorganic substances at ambient temperature
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8b - Wide dispersive indoor use of reactive substances in open systems
- ERC8e - Wide dispersive outdoor use of reactive substances in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of worker exposure

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%

Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor

Assumes process temperature up to	40 C
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Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC11 - Non industrial spraying
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available
Covers concentrations up to	100%
Physical form of product	Liquid
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Process category(ies)	PROC26 - Handling of solid inorganic substances at ambient temperature
Covers concentrations up to	100%
Physical form of product	Solid, high dustiness
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN 374) and eye protection Wear a respirator conforming to EN 140 with Type A filter or better Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying See Section 8 for information on appropriate personal protective equipment
Indoor/Outdoor use	Indoor
Assumes process temperature up to	40 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8b - Wide dispersive indoor use of reactive substances in open systems
- ERC8e - Wide dispersive outdoor use of reactive substances in open systems

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic	4.07 mg/m ³
Consumer - inhalative, long-term - systemic	3.04 mg/m ³

Calculation method The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

MEASE

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	0.1 mg/m ³	< 0.01
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.7 mg/m ³	0.039
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	1.4 mg/m ³	0.078
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC11 - Non industrial spraying	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	0.01 mg/m ³	< 0.01
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	3.5 mg/m ³	0.196
PROC19 - Hand-mixing with intimate contact and only PPE available	Worker - inhalative, long-term - systemic	0.05 mg/m ³	< 0.01
PROC26 - Handling of solid inorganic substances at ambient temperature	Worker - inhalative, long-term - systemic	2 mg/m ³	0.112

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Chemical name	TRISODIUM ORTHOPHOSPHATE, DODECAHYDRATE
Pure substance/mixture	Substance
REACH registration number	01-2119489800-32-XXXX
CAS No	10101-89-0
EC No (EU Index No)	231-509-8
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford GBR
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306
E-mail address	SDS.EMEA@univarsolutions.com

Section 1 - Title

Title	Fertilisers
Type	Consumer
Main user group	Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC8b - Wide dispersive indoor use of reactive substances in open systems ERC8e - Wide dispersive outdoor use of reactive substances in open systems
Product category(ies)	PC12 - Fertilisers
Product Name	PHOSPHORIC ACID,TRISODIUM SALT, DODECAHYDRATE
Sector(s) of use	SU21 - Consumer uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC8b - Wide dispersive indoor use of reactive substances in open systems
- ERC8e - Wide dispersive outdoor use of reactive substances in open systems

Conditions and measures related to municipal sewage treatment plant

Type	Municipal STP
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Conditions and measures related to external treatment of waste for disposal

Disposal	Dispose of waste product or used containers according to local regulations
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Control of consumer exposure

Product categories [PC]	PC12 - Fertilisers
Covers concentrations up to	100%
Amounts used	1000 g/event
Exposure duration	1 hr/event
Use frequency	1 events per day
Risk management measures	No Spraying
Indoor/Outdoor use	Outdoor

Product categories [PC]	PC12 - Fertilisers
Covers concentrations up to	25%
Amounts used	2000 g/event
Exposure duration	0.5 hr/event
Use frequency	1 events per day

Risk management measures	No Spraying
Indoor/Outdoor use	Outdoor
Product categories [PC]	PC12 - Fertilisers
Covers concentrations up to	25%
Amounts used	5000 g/event
Exposure duration	0.5 hr/event
Use frequency	1 events per day
Indoor/Outdoor use	Outdoor

Section 3 - Exposure estimation

**Environmental release category(ies) - ERC8b - Wide dispersive indoor use of reactive substances in open systems
- ERC8e - Wide dispersive outdoor use of reactive substances in open systems**

**Predicted No Effect Concentration
(PNEC)**

Derived No Effect Level (DNEL):

Worker - inhalative, long-term - systemic 4.07 mg/m³
Consumer - inhalative, long-term - systemic 3.04 mg/m³

Calculation method

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated

Product category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PC12 - Fertilisers	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC12 - Fertilisers	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC12 - Fertilisers	Consumer - combined, long-term - systemic		< 0.01
PC12 - Fertilisers	Consumer - inhalative, long-term - systemic	0.0000662 mg/m ³	< 0.01
PC12 - Fertilisers	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC12 - Fertilisers	Consumer - combined, long-term - systemic		< 0.01
PC12 - Fertilisers	Consumer - inhalative, long-term - systemic	0.017 mg/m ³	< 0.01
PC12 - Fertilisers	Consumer - oral, long-term - systemic	0 mg/kg bw/d	< 0.01
PC12 - Fertilisers	Consumer - combined, long-term - systemic		< 0.01

Section 4 - Guidance to check compliance with the exposure scenario

Used ECETOC TRA model.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are

implemented.