

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

Supersedes date 28-Mar-2022

Revision date 06-Feb-2026

Revision Number 6.01

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

1.1. Product identifier

Product Code(s)	20184
Safety data sheet number	20184
Product Name	CITRIC ACID ANHYDROUS
Index No	607-750-00-3
EC Number	201-069-1
CAS No	77-92-9
Synonyms	2-HYDROXY 1,2,3 PROPANE TRICARBOXYLIC ACID, CITRIC ACID ANHYDROUS BP2003/E330/USP27, CITRIC ACID ANH FG 30-100 M, CITRIC ACID ANHYDROUS F6000, CITRIC ACID ANHYDROUS N1560, CITRIC ACID 0AQ FCC ed7, CITRIC ACID WV, CITRIC ACID 0AQ, CITRIC ACID WV GRAN, CITRIC ACID ANH E330 12-40M LT, CITRIC ACID ANH E330 16-40M YX, CITRIC ACID ANH E330 MG 1200 CB, CITRIC ACID ANH JBN, CITRIC ACID ANHYDROUS F4020, CITRIC ACID ANHYDROUS FINE GRANULAR 51N, CITRIC ACID ANHY WFG JBN, CITRIC ACID ANH LTY JBN, CITRIC ACID ANH JGY JBN, CITRIC ACID ANH WEY JBN, CITRIC ACID ANH P250 PH, CITRIC ACID ANHYDROUS F0000, CITRIC ACID ANHYDROUS F6040, CITRIC ACID ANHYDROUS F7040, CITRIC ACID ANHYDROUS G3015, CITRIC ACID ANHYDROUS F3500, CITRIC ACID ANHYDROUS F2500, CITRIC ACID ANH N1560 FG/PH, CITRIC ACID ANH E330 12 40M RZ, CITRIC ACID ANH N1500 FG/PH, CITRIC ACID ANH 1200 CBE, CITRIC ACID ANHYDROUS 12-40 SUNSHINE, CITRIC ACID ANH E330 12-40M CF, CITRIC ACID ANH MCS, CITRIC ACID ANH S40, CITRIC ACID ANH POWDER CBE, CITRIC ACID ANH F5020 FG PH, CITRIC ACID ANH F6000, CITRIC ACID ANH 12-40 SNE***

Pure substance/mixture Substance

Contains CITRIC ACID ANHYDROUS

Molecular weight 192.12

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

Recommended use	Food industry Cosmetics Industrial application Pharmaceutical Food/Feed additive Personal care
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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)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

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 CITRIC ACID ANHYDROUS

**Signal word**

Warning

Hazard statements

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

Precautionary statements

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray

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

P280 - Wear eye protection/ face protection

P501 - Dispose of contents/ container to an approved waste disposal plant

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)
CITRIC ACID ANHYDROUS 77-92-9	90 - 100%	201-069-1 (607-750-00-3)	-	Eye Irrit. 2 (H319) STOT SE 3 (H335)	-	-	-

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	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention.
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. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.
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	May cause redness and tearing of the eyes. Burning sensation.
Inhalation	May cause respiratory irritation.
Eyes	May cause redness and tearing of the eyes. Causes serious eye irritation.
Dermal	May cause slight 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	Dry chemical, CO ₂ , alcohol-resistant foam or water spray.
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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

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 protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

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 See Section 12 for additional Ecological Information.

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 Take up mechanically, placing in appropriate containers for disposal.

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 Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. Avoid breathing vapours or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep at temperatures between 10 and 30 °C.

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

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

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
CITRIC ACID ANHYDROUS 77-92-9	0.44 mg/l		0.044 mg/l		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
CITRIC ACID ANHYDROUS 77-92-9	34,6 mg/kg	3,46 mg/kg	> 1000 mg/l	33,1 mg/kg	

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.

Gloves

Duration of contact	PPE - Glove material	Glove thickness	Break through time
Long term (repeated)	Nitrile rubber	0.3 mm	8.0 hours

Skin and body protection Wear suitable protective clothing.

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. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline powder
Colour	white
Odour	Odourless.
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	~ 153 °C	
Initial boiling point and boiling range	> 175 °C	
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point	345 °C	Closed cup.
Autoignition temperature		No information available.
Decomposition temperature	175 °C	
pH		No information available.
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity	6.5 mPa s	@ 20 °C.
Water solubility	Soluble in water	
Solubility(ies)	Soluble in the following materials; Ethanol	
Partition coefficient	log Pow: -1.72	
Vapour pressure	0.0002 hPa	@ 25 °C.
Relative density	1.665	20 °C.
Bulk density	400 - 1300 kg/m ³	
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	~ 0.075 - 2.8 mm	
Particle Size Distribution	No information available	
Explosive properties	Not considered to be explosive.	
Oxidising properties	Does not meet the criteria for classification as oxidising	

9.2. Other information

Molecular weight	192.12
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under recommended storage conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Dust can form an explosive mixture with air.

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 Strong oxidising agents. Reducing agent. Strong bases. Metals.

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 May cause slight irritation.

Ingestion Gastrointestinal discomfort.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause redness and tearing of the eyes.

Acute toxicity**Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
CITRIC ACID ANHYDROUS	5400 mg/kg (Mouse)	> 2000 mg/kg (Rat)	-

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

Skin corrosion/irritation No information available.

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 404	Rabbit	Dermal			non-irritant

Serious eye damage/eye irritation Causes serious eye irritation.

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD 405	Rabbit	eye			Irritant

Respiratory or skin sensitisation No information available.

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Exposure route	Results
		Dermal	Not a skin sensitiser
		Inhalation	No sensitisation responses were observed

Germ cell mutagenicity No information available.

Component Information

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Results
		Not mutagenic

Carcinogenicity No information available.

Component Information

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Results
		Not Carcinogenic

Reproductive toxicity No information available.

STOT - single exposure May cause respiratory irritation.

CITRIC ACID ANHYDROUS (77-92-9)

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

STOT - repeated exposure No information available.

Component Information

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Exposure route	Effective dose	Exposure time	Results
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					Not classified
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Aspiration hazard No information available.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Not considered to be harmful to aquatic life.

CITRIC ACID ANHYDROUS (77-92-9)

Method	Species	Endpoint type	Effective dose	Exposure time	Results
OECD Test No. 203: Fish, Acute Toxicity Test	Leuciscus idus	LC50	440 - 760 mg/L	48 hours	
	Daphnia magna	EC50	1 535 mg/L	24 hours	
OECD Test No. 201: Freshwater Algae and Cyanobacteria, Growth Inhibition Test	Scenedesmus quadricauda	NOEC	425 mg/L	8 days	

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
CITRIC ACID ANHYDROUS	-	LC50: =1516mg/L (96h, Lepomis macrochirus)	-	-

12.2. Persistence and degradability

Persistence and degradability Readily biodegradable.

CITRIC ACID ANHYDROUS (77-92-9)

Method	Exposure time	Value	Results
OECD Test No. 301B: Ready Biodegradability: CO2 Evolution Test (TG 301 B)	28 days	97 % Biodegradation	Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.

Component Information

Chemical name	Partition coefficient
CITRIC ACID ANHYDROUS	-1.72***

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
CITRIC ACID ANHYDROUS	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	Not applicable
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	Not applicable
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	Not applicable
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	Not applicable
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)

Chemical name	The Biocidal Products Regulations 2001 (as amended)
CITRIC ACID ANHYDROUS - 77-92-9	Product-type 2: Disinfectants and algacides not intended for direct application to humans or animals

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 A Chemical Safety Assessment has been carried out for this substance

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

Full text of H-Statements referred to under section 3

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

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	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	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]

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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	Use as an intermediate
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 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Product category(ies)	PC19 - Intermediate
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites 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)

Product characteristics

Physical form of product	Acid Liquid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

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)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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
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 ERC2 - Formulation of preparations (mixtures) ERC3 - Formulation in materials ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies)	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) 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) PROC13 - Treatment of articles by dipping and pouring PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising PROC15 - Use as laboratory reagent
Product category(ies)	PROC19 - Hand-mixing with intimate contact and only PPE available PC0 - Other Products PC1 - Adhesives, sealants PC3 - Air care products PC9 - Coatings and paints, fillers, putties, thinners PC12 - Fertilisers PC18 - Ink and toners PC30 - Photo-chemicals PC31 - Polishes and wax blends PC35 - Washing and cleaning products (including solvent based products) PC39 - Cosmetics, personal care products
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU5 - Manufacture of textiles, leather, fur SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys) SU13 - Manufacture of other non-metallic mineral products SU20 - Health services

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC1 - Manufacture of substances
 - ERC2 - Formulation of preparations (mixtures)
 - ERC3 - Formulation in materials
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation**Environmental release category(ies) - ERC1 - Manufacture of substances****- ERC2 - Formulation of preparations (mixtures)****- ERC3 - Formulation in materials****- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles****Predicted No Effect Concentration (PNEC)**

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

**Calculation method
Remarks**

Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):**Calculation method
Remarks**

Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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 Worker Consumer
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC8a - Wide dispersive indoor use of processing aids in open systems ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
Process category(ies) PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC19 - Hand-mixing with intimate contact and only PPE available
Product category(ies) PC2 - Adsorbent(s) PC39 - Cosmetics, personal care products
Article categories AC8 - Paper articles
Sector(s) of use SU20 - Health services SU21 - Consumer uses 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
 - ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid splashing Clear spills immediately Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Approved respirator may be necessary if local exhaust ventilation is not adequate. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Control of consumer exposure	
Product (sub) category(ies)	General measures applicable to all activities
Risk management measures	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place

Section 3 - Exposure estimation

Environmental release category(ies) - ERC8a - Wide dispersive indoor use of processing aids in open systems - ERC11a - Wide dispersive indoor use of long-life articles and materials with low release

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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	Detergent and Washing and cleaning products
Type	Worker Consumer
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC2 - Formulation of preparations (mixtures) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles ERC8a - Wide dispersive indoor use of processing aids in open systems ERC8b - Wide dispersive indoor use of reactive substances in open systems ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure 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) 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 PROC11 - Non industrial spraying PROC13 - Treatment of articles by dipping and pouring
Product category(ies)	PC3 - Air care products PC28 - Perfumes, fragrances PC31 - Polishes and wax blends PC35 - Washing and cleaning products (including solvent based products) PC36 - Water softeners PC37 - Water treatment chemicals
Article categories	AC8 - Paper articles AC35 - Scented paper articles
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU21 - Consumer uses SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC8a - Wide dispersive indoor use of processing aids in open systems
 - ERC8b - Wide dispersive indoor use of reactive substances in open systems

- ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid contact with contaminated tools and objects Avoid splashing Clear spills immediately Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Approved respirator may be necessary if local exhaust ventilation is not adequate. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Risk management measures	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place

Section 3 - Exposure estimation

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

- ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
- ERC8a - Wide dispersive indoor use of processing aids in open systems
- ERC8b - Wide dispersive indoor use of reactive substances in open systems
- ERC9a - Wide dispersive indoor use of substances in closed systems
- ERC9b - Wide dispersive outdoor use of substances in closed systems

Predicted No Effect Concentration

(PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
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Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Paper industry.
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)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Product category(ies) PC26 - Paper and board dye, finishing and impregnation products; including bleaches and other processing aids
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

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

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid splashing Clear spills immediately Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Approved respirator may be necessary if local exhaust ventilation is not adequate. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

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)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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	Building and construction work
Type	Worker Consumer
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC5 - Industrial use resulting in inclusion into or onto a matrix ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release ERC11b - Wide dispersive indoor use of long-life articles and materials with high or intended release ERC12a - Industrial processing of articles with abrasive techniques (low release)
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure 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) 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 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 PROC21 - Low energy manipulation of substances bound in materials and/or articles PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Product category(ies)	PC10 - Building and construction preparations not covered elsewhere
Article categories	AC4 - Stone, plaster, cement, glass and ceramic articles AC12-1 AC12-2
Sector(s) of use	SU2a - Mining (without offshore industries) SU2b - Offshore industries SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys) SU19 - Building and construction work SU21 - Consumer uses SU22 - Professional uses

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

- ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
- ERC11b - Wide dispersive indoor use of long-life articles and materials with high or intended release
- ERC12a - Industrial processing of articles with abrasive techniques (low release)

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Risk management measures	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place

Section 3 - Exposure estimation

Environmental release category(ies) - ERC5 - Industrial use resulting in inclusion into or onto a matrix
- ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
- ERC11b - Wide dispersive indoor use of long-life articles and materials with high or intended release
- ERC12a - Industrial processing of articles with abrasive techniques (low release)

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Polymer preparations and compounds
Type 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) PROC3 - Use in closed batch process (synthesis or formulation)
 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

Product category(ies) PC32 - Polymer preparations and compounds
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU11 - Manufacture of rubber 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) - ERC6b - Industrial use of reactive processing aids

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Oil
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies) 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

Product category(ies) PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
 PC40 - Extraction agents

Sector(s) of use SU2a - Mining (without offshore industries) SU2b - Offshore industries 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) - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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	Coatings and paints, thinners, paint removers
Type	Worker Consumer
Main user group	Industrial uses: Uses of substances as such or in preparations at industrial sites Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Environmental release category(ies)	ERC5 - Industrial use resulting in inclusion into or onto a matrix ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release ERC11b - Wide dispersive indoor use of long-life articles and materials with high or intended release
Process category(ies)	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 PROC11 - Non industrial spraying PROC19 - Hand-mixing with intimate contact and only PPE available PROC21 - Low energy manipulation of substances bound in materials and/or articles PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles
Product category(ies)	PC9 - Coatings and paints, fillers, putties, thinners PC18 - Ink and toners PC34 - Textile dyes, finishing and impregnating products
Sector(s) of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU17 - General manufacturing SU18 - Manufacture of furniture SU19 - Building and construction work SU21 - Consumer uses SU22 - Professional uses

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

- ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release
- ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release
- ERC11a - Wide dispersive indoor use of long-life articles and materials with low release
- ERC11b - Wide dispersive indoor use of long-life articles and materials with high or intended release

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid splashing Clear spills immediately Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Approved respirator may be necessary if local exhaust ventilation is not adequate. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Control of consumer exposure

Product (sub) category(ies)	General measures applicable to all activities
Risk management measures	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place

Section 3 - Exposure estimation

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

- ERC8c - Wide dispersive indoor use resulting in inclusion into or onto a matrix

- ERC8f - Wide dispersive outdoor use resulting in inclusion into or onto a matrix

- ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release

- ERC10b - Wide dispersive outdoor use of long-life articles and materials with high or intended release

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

- ERC11b - Wide dispersive indoor use of long-life articles and materials with high or intended release

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)

Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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 Photo-chemicals
Type Worker Consumer
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
 Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC8a - Wide dispersive indoor 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)
 PROC13 - Treatment of articles by dipping and pouring
Product category(ies) PC30 - Photo-chemicals
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU20 - Health services SU21 - Consumer uses 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

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
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Technical conditions and measures to control dispersion from source towards the worker	Avoid splashing Clear spills immediately Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Approved respirator may be necessary if local exhaust ventilation is not adequate. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Control of consumer exposure	
Product (sub) category(ies)	General measures applicable to all activities
Risk management measures	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Calculation method Risk management measures are based on qualitative risk characterization
Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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 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) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
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
Product category(ies) PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
 PC23 - Leather tanning, dye, finishing, impregnation and care products PC24 - Lubricants, greases, release products
Article categories AC5 - Fabrics, textiles and apparel AC6 - Leather articles
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) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or
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	national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

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)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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 Use as laboratory reagent
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
 ERC7 - Industrial use of substances in closed systems
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
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Product category(ies) PC4 - Anti-freeze and de-icing products PC16 - Heat transfer fluids PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37 - Water treatment chemicals
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) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC7 - Industrial use of substances in closed systems

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or
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	national regulations
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Control of worker exposure	
Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Approved respirator may be necessary if local exhaust ventilation is not adequate. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
- ERC7 - Industrial use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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	Water treatment chemicals
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 ERC7 - Industrial use of substances in closed systems
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 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 PROC18 - Greasing at high energy conditions PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems PROC25 - Other hot work operations with metals
Product category(ies)	PC4 - Anti-freeze and de-icing products PC7 - Base metals and alloys PC14 - Metal surface treatment products, including galvanic and electroplating products PC16 - Heat transfer fluids PC17 - Hydraulic fluids PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC25 - Metal working fluids PC31 - Polishes and wax blends PC35 - Washing and cleaning products (including solvent based products) PC37 - Water treatment chemicals
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 SU16 - Manufacture of computer, electronic and optical products, electrical 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
- ERC7 - Industrial use of substances in closed systems

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
- ERC7 - Industrial use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method Risk management measures are based on qualitative risk characterization

Remarks Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method Risk management measures are based on qualitative risk characterization

Remarks Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
EC No (EU Index No)	201-069-1
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	Metal surface 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 ERC6b - Industrial use of reactive processing aids
Process category(ies)	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 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 PROC17 - Lubrication at high energy conditions and in partly open process PROC18 - Greasing at high energy conditions PROC23 - Open processing and transfer operations with minerals/metals at elevated temperature
Product category(ies)	PC7 - Base metals and alloys PC14 - Metal surface treatment products, including galvanic and electroplating products PC25 - Metal working fluids PC31 - Polishes and wax blends PC35 - Washing and cleaning products (including solvent based products)
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 SU16 - Manufacture of computer, electronic and optical products, electrical 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
- ERC6b - Industrial use of reactive processing aids

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
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Remarks	Biodegradable
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Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
- ERC6b - Industrial use of reactive processing aids

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg wwt)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg wwt)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method
Remarks

Risk management measures are based on qualitative risk characterization
Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name Citric Acid
Pure substance/mixture Substance
REACH registration number 01-2119457026-42-XXXX
CAS No 5949-29-1
EC No (EU Index No) 201-069-1
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 Agriculture, forestry, fishery
Type Worker Consumer
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
 Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Environmental release category(ies) ERC2 - Formulation of preparations (mixtures) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles ERC8b - Wide dispersive indoor use of reactive substances in open systems ERC8d - Wide dispersive outdoor use of processing aids in open systems
Process category(ies) PROC3 - Use in closed batch process (synthesis or formulation)
 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
 PROC10 - Roller application or brushing
 PROC11 - Non industrial spraying
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
 PROC15 - Use as laboratory reagent
 PROC19 - Hand-mixing with intimate contact and only PPE available
Product category(ies) PC8 - Biocidal Products (e.g. disinfectants, pest control) PC12 - Fertilisers PC21 - Laboratory chemicals
Sector(s) of use SU1 - Agriculture, forestry, fishery SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites SU21 - Consumer uses SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)
 - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
 - ERC8b - Wide dispersive indoor use of reactive substances in open systems
 - ERC8d - Wide dispersive outdoor use of processing aids in open systems

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards the worker	Avoid accumulating electrostatic charge Use with local exhaust ventilation Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

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

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

- ERC8b - Wide dispersive indoor use of reactive substances in open systems

- ERC8d - Wide dispersive outdoor use of processing aids in open systems

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method

Risk management measures are based on qualitative risk characterization

Remarks

Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

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E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Medical Devices
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC7 - Industrial use of substances in closed systems
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
Product category(ies) PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU20 - Health services SU22 - Professional uses

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

Product characteristics

Physical form of product	Acid Liquid Liquid or Solid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards	Avoid accumulating electrostatic charge Use with local exhaust ventilation

the worker	Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Control of consumer exposure	
Product (sub) category(ies)	General measures applicable to all activities
Risk management measures	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

Chemical name	Citric Acid
Pure substance/mixture	Substance
REACH registration number	01-2119457026-42-XXXX
CAS No	5949-29-1
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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
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) PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Product category(ies)	PC19 - Intermediate
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

Product characteristics

Physical form of product	Acid Liquid
Remarks	Biodegradable

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Avoid dispersal of spilt material Do not allow runoff to sewer, waterway or ground.
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Control measures to prevent releases

Water	Neutralisation is normally necessary before waste water is discharged into water treatment plants
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations
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Control of worker exposure

Title	General measures applicable to all activities
Technical conditions and measures to control dispersion from source towards	Avoid accumulating electrostatic charge Use with local exhaust ventilation

the worker	Avoid splashing Clear spills immediately Avoid contact with contaminated tools and objects Use only in a well ventilated area For further specification, refer to section 8 of the SDS
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable respiratory protection. Wear suitable gloves tested to EN 374 Wear suitable face shield Use suitable eye protection See Section 8 for information on appropriate personal protective equipment
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented Demonstrable and effective housekeeping practices are in place Avoid direct eye contact with product, also via contamination on hands Regular cleaning of equipment Regular cleaning of work area Keep good industrial hygiene Ensure operatives are trained to minimise exposures Supervision in place to check that the RMMs in place are being used correctly and OCs followed For further specification, refer to section 8 of the SDS

Section 3 - Exposure estimation

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

Predicted No Effect Concentration (PNEC)

Freshwater	0.44 mg/l
Freshwater sediment	3.46 mg/kg d.w. (0.752 mg/kg ww)
Marine water	0.044 mg/l
Marine sediment	34.6 mg/kg d.w. (7.52 mg/kg ww)
Soil	33.1 mg/kg d.w.
Impact on Sewage Treatment	> 1000 mg/l

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Derived No Effect Level (DNEL):

Calculation method	Risk management measures are based on qualitative risk characterization
Remarks	Qualitative approach used to conclude safe use

Section 4 - Guidance to check compliance with the exposure scenario

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. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.