

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

Supersedes date 28-Jan-2020

Revision date 04-Jun-2024

Revision Number 4

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

1.1. Product identifier

Product Code(s) 00117

Safety data sheet number 00117

Product Name TRIETHYL PHOSPHATE

Index No 015-013-00-7

EC Number 201-114-5

CAS No 78-40-0

Synonyms TEP, ETHYL PHOSPHATE, TRIETHYL ESTER, LEVAGARD TEP-Z, TRIETHYL PHOS (TEP)

Pure substance/mixture Substance

Contains TRIETHYL PHOSPHATE

Molecular weight 182.15

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

Recommended use Industrial use
For further information, see attached Exposure Scenario

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

Acute toxicity - Oral	Category 4 - (H302)
Serious eye damage/eye irritation	Category 2 - (H319)

2.2. Label elements

Contains TRIETHYL PHOSPHATE

**Signal word**

Warning

Hazard statements

H302 - Harmful if swallowed

H319 - Causes serious eye irritation

Precautionary statements

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

P270 - Do not eat, drink or smoke when using this product

P280 - Wear eye protection/ face protection

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P337 + P313 - If eye irritation persists: Get medical advice/attention

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

Additional information

This product requires tactile warnings if supplied to the general public.

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)
TRIETHYL PHOSPHATE 78-40-0	99.8%	201-114-5	-	Eye Irrit. 2 (H319) Acute Tox. 4 (H302)	-	-	-

Full text of H- and EUH-phrases: see section 16This 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. Remove to fresh air. Rinse mouth thoroughly with water. If breathing is difficult, (trained personnel should) give oxygen. Get medical attention if symptoms occur.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a doctor.

Skin contact

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.

Ingestion

Rinse mouth thoroughly with water. Do not induce vomiting without medical advice. Drink plenty of water. Get medical attention.

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.

Eyes

Burning sensation. May cause redness and tearing of the eyes.

Ingestion Harmful if swallowed

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

Note to doctors Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Carbon oxides. Phosphorus 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 Wear suitable protective clothing. Avoid contact with skin, eyes and inhalation of vapours. Ensure adequate ventilation.

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 Collect with absorbent, non-combustible material into suitable containers.

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 Use personal protection recommended in Section 8. Avoid contact with skin, eyes and inhalation of vapours. Ensure adequate ventilation.

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. Wash face, hands and any exposed skin thoroughly after handling. Ensure that eyewash stations and safety showers are close to the workstation location.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from direct sunlight. Keep away from food, drink and animal feedingstuffs. See section 10 for more information.

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

Chemical name	Oral	Dermal	Inhalation
TRIETHYL PHOSPHATE 78-40-0		2 mg/kg/day [4] [6]	9.9 mg/m ³ [4] [6]

[4] Systemic health effects.

[6] Long term.

[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
TRIETHYL PHOSPHATE 78-40-0	1 mg/kg bw/day [4] [6] 5 mg/kg bw/day [4] [7]	1 mg/kg/day [4] [6]	1.74 mg/m ³ [4] [6]

[4] Systemic health effects.

[5] Local health effects.

[6] Long term.

[7] Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
TRIETHYL PHOSPHATE 78-40-0	0.632 mg/l	9 mg/L	0.0632 mg/l		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
TRIETHYL PHOSPHATE 78-40-0	5 mg/kg sediment dw	0.5 mg/kg sediment dw	298.5 mg/L	0.64 mg/kg soil dw	298.5 mg/l

8.2. Exposure controls

Engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment
Eye/face protection

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

Hand protection

Wear suitable gloves. 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
	Nitrile rubber Polyvinyl chloride (PVC)		

Skin and body protection

Wear appropriate clothing to prevent reasonably probable skin contact.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Gas filter, type A.

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. Wash face, hands and any exposed skin

thoroughly after handling. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Liquid
Colour	Colourless transparent
Odour	Slight.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	-56.4 °C	No information available.
Initial boiling point and boiling range	215 - 216 °C	No information available.
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point	115 °C	No information available.
Autoignition temperature	454 °C	No information available.
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)		No information available.
Kinematic viscosity	1.46 mm ² /s	No information available.
Dynamic viscosity		No information available.
Water solubility	Miscible in water 500g/l @ 25 °C)	No information available.
Solubility(ies)		No information available.
Partition coefficient	log Pow: 1.1	No information available.
Vapour pressure	0.523 hPa @ 25°C	No information available.
Relative density	1.07 g/cm ³	No information available.
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	Not considered to be explosive.	
Oxidising properties	Does not meet the criteria for classification as oxidising	

9.2. Other information

Molecular weight	182.15
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Stable under recommended storage conditions.
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10.2. Chemical stability

Stability	Stable under normal conditions.
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Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
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10.4. Conditions to avoid

Conditions to avoid	Protect from direct sunlight.
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10.5. Incompatible materials

Incompatible materials	Strong oxidising agents.
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10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides. Phosphorus oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Harmful if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	May cause redness and tearing of the eyes.
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Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
TRIETHYL PHOSPHATE	1100 - 1600 mg/kg (Rat)	> 20 g/kg (Rabbit)	> 8817 mg/m ³ (Rat) 4 h

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

Skin corrosion/irritation	Based on available data the classification criteria are not met.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitisation	Based on available data the classification criteria are not met.
Germ cell mutagenicity	Based on available data the classification criteria are not met.
Carcinogenicity	Based on available data the classification criteria are not met.
Reproductive toxicity	Based on available data the classification criteria are not met.
STOT - single exposure	Based on available data the classification criteria are not met.
STOT - repeated exposure	Based on available data the classification criteria are not met.
Aspiration hazard	Based on available data the classification criteria are not met.
Other adverse effects	No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	The environmental impact of this product has not been fully investigated.
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Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
TRIETHYL PHOSPHATE	EC50: 901 mg/l (72h, Algae)	LC50: > 100 mg/l (96h, Fish)	-	EC50: 2705 mg/l (24h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation

Bioconcentration factor (BCF) BCF: ≥ 0.5 - ≤ 0.8

Component Information

Chemical name	Partition coefficient
TRIETHYL PHOSPHATE	1.11

12.4. Mobility in soil

Mobility in soil No information available.

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
TRIETHYL PHOSPHATE	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 Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID number Not regulated

14.2

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

14.3 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)

Not applicable

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

Not applicable

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

Not applicable

International Inventories

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

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AIIC - Australian Inventory of Industrial Chemicals

NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment**Chemical Safety Report**

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**

H302 - Harmful if swallowed

H319 - Causes serious eye 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 **SDS sections updated 1 8 9 16**

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	K Winter
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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

Exposure scenario

Handling of raw materials and compounding of curable plastics (Polyester-/epoxide resin)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Handling of raw materials and compounding of curable plastics (Polyester-/epoxide resin)
Product category	PC32 Polymer preparations and compounds.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging SU12 Manufacture of plastics products, including compounding and conversion

Environment

Environmental release category	ERC2 Formulation into mixture
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Worker

Process category	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Handling of raw materials and compounding of curable plastics (Polyester-/epoxide resin)

Maximum daily site tonnage: 34000 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.
Technical measures Store substance within a closed system.
STP type Municipal STP.
STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Treat air emission to provide a typical removal efficiency of 90%.
Water If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.
Disposal method Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Concentration details Covers concentrations up to 10 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
Assumes a good basic standard of occupational hygiene is implemented.

Handling of raw materials and compounding of curable plastics (Polyester-/epoxide resin)

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 5.92 mg/l, PNEC 298.5 mg/l, RCR 0.0198 Fresh water: Exposure 0.597 mg/l, PNEC 0.632 mg/l, RCR 0.945 Marine water: Exposure 0.0598 mg/l, PNEC 0.0632 mg/l, RCR 0.945

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.13 Worker - inhalation: Exposure 13.66 mg/m³, DNEL 93.6 mg/m³, RCR 0.146 PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 45.5 mg/m³, DNEL 93.6 mg/m³, RCR 0.486 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation
Exposure	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Worker - dermal: Exposure 0.0343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00129 Worker - inhalation: Exposure 1.366 mg/m³, DNEL 93.6 mg/m³, RCR 0.0146 PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 0.0686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00258 Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Worker - dermal: Exposure 0.137 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00515 Worker - inhalation: Exposure 4.55 mg/m³, DNEL 93.6 mg/m³, RCR 0.0486 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258 Worker - inhalation: Exposure 0.683 mg/m³, DNEL 93.6 mg/m³, RCR 0.00730 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258 Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244

Exposure scenario

Industrial use (curing) of curable plastics formulations (Polyester-/epoxide resin)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use (curing) of curable plastics formulations (Polyester-/epoxide resin)
Product category	PC32 Polymer preparations and compounds.
Main sector	SU3 Industrial uses
Sector of use	SU12 Manufacture of plastics products, including compounding and conversion

Environment

Environmental release category	ERC5 Use at industrial site leading to inclusion into/onto article
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Worker

Process category	PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC14 Tableting, compression, extrusion, pelletisation, granulation
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Industrial use (curing) of curable plastics formulations (Polyester-/epoxide resin)

Maximum daily site tonnage: 15000 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.
Technical measures Store substance within a closed system.
STP type Municipal STP.
STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Treat air emission to provide a typical removal efficiency of 90%.
Water If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.
Disposal method Municipal waste incineration, or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Concentration details Covers concentrations up to 10 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
Assumes a good basic standard of occupational hygiene is implemented.

Industrial use (curing) of curable plastics formulations (Polyester-/epoxide resin)

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 5.60 mg/l, PNEC 298.5 mg/l, RCR 0.0188 Fresh water: Exposure 0.565 mg/l, PNEC 0.632 mg/l, RCR 0.894 Marine water: Exposure 0.0565 mg/l, PNEC 0.0632 mg/l, RCR 0.894

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC4 Chemical production where opportunity for exposure arises Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.262 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244 PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 45.5 mg/m³, DNEL 93.6 mg/m³, RCR 0.486 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244 PROC10 Roller application or brushing Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.607 Worker - inhalation: Exposure 45.5 mg/m³, DNEL 93.6 mg/m³, RCR 0.486 PROC14 Tableting, compression, extrusion, pelletisation, granulation Worker - dermal: Exposure 3.43 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.152 Worker - inhalation: Exposure 22.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.244

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation

Industrial use (curing) of curable plastics formulations (Polyester-/epoxide resin)

Exposure

PROC4 Chemical production where opportunity for exposure arises

Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0304

Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244

PROC5 Mixing or blending in batch processes

Worker - dermal: Exposure 0.0686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00258

Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - dermal: Exposure 0.137 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00515

Worker - inhalation: Exposure 4.55 mg/m³, DNEL 93.6 mg/m³, RCR 0.0486

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258

Worker - inhalation: Exposure 0.683 mg/m³, DNEL 93.6 mg/m³, RCR 0.00730

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258

Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244

PROC10 Roller application or brushing

Worker - dermal: Exposure 1.37 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.0606

Worker - inhalation: Exposure 4.55 mg/m³, DNEL 93.6 mg/m³, RCR 0.0486

PROC14 Tabletting, compression, extrusion, pelletisation, granulation

Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.0152

Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244

Exposure scenario

Professional/Consumer use (curing) of curable plastics formulations (indoors)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional/Consumer use (curing) of curable plastics formulations(indoors)
Product category	PC32 Polymer preparations and compounds.
Main sector	SU21 Consumer uses SU22 Professional uses

Environment

Environmental release category	ERC8c Widespread use leading to inclusion into/onto article (indoor)
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Worker

Process category	PROC5 Mixing or blending in batch processes PROC10 Roller application or brushing PROC11 Non industrial spraying PROC14 Tableting, compression, extrusion, pelletisation, granulation
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 10 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Professional/Consumer use (curing) of curable plastics formulations (indoors)

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and clear transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; Ensure suitable personal protective equipment is available; Clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.

Wear suitable working clothes.

Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state Liquid

Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Store substance within a closed system.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.

Disposal method Municipal waste incineration. , or: Landfill.

3. Exposure estimation (Environment 1)

Professional/Consumer use (curing) of curable plastics formulations (indoors)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 0.0136 mg/l, PNEC 298.5 mg/l, RCR 0.0000456 Fresh water: Exposure 0.00678 mg/l, PNEC 0.632 mg/l, RCR 0.0107 Marine water: Exposure 0.000723 mg/l, PNEC 0.0632 mg/l, RCR 0.0114

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 45.54 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.485 PROC14 Tableting, compression, extrusion, pelletisation, granulation Worker - dermal: Exposure 3.43 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.152 Worker - inhalation: Exposure 45.54 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.485

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 0.0686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00258 Worker - inhalation: Exposure 9.11 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.0973 PROC10 Roller application or brushing Worker - dermal: Exposure 1.37 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.0606 Worker - inhalation: Exposure 22.77 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.243 PROC11 Non industrial spraying Worker - dermal: Exposure 2.14 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0804 Worker - inhalation: Exposure 91.08 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.973 PROC14 Tableting, compression, extrusion, pelletisation, granulation Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.0152 Worker - inhalation: Exposure 9.108 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.0973

Exposure scenario

Professional/Consumer use (curing) of curable plastics formulations (outdoors)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Professional/Consumer use (curing) of curable plastics formulations(outdoors)
Product category	PC32 Polymer preparations and compounds.
Main sector	SU21 Consumer uses SU22 Professional uses

Environment

Environmental release category	ERC8f Widespread use leading to inclusion into/onto article (outdoor)
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Worker

Process category	PROC5 Mixing or blending in batch processes PROC10 Roller application or brushing PROC11 Non industrial spraying PROC14 Tableting, compression, extrusion, pelletisation, granulation
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 10 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Professional/Consumer use (curing) of curable plastics formulations (outdoors)

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Outdoor.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
Efficiency of at least 90%
PROC11 Non industrial spraying
Wear a respirator conforming to EN140 with Type A filter or better.

Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state Liquid

Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Store substance within a closed system.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.

Disposal method Municipal waste incineration. , or: Landfill.

3. Exposure estimation (Environment 1)

Assessment method Used ECETOC TRA model.

Environmental exposure STP: Exposure 0.0136 mg/l, PNEC 298.5 mg/l, RCR 0.0000456
Fresh water: Exposure 0.00678 mg/l, PNEC 0.632 mg/l, RCR 0.0107
Marine water: Exposure 0.000723 mg/l, PNEC 0.0632 mg/l, RCR 0.0114

3. Exposure estimation (Health 1)

Professional/Consumer use (curing) of curable plastics formulations (outdoors)

Assessment method	Used ECETOC TRA model.
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 45.54 mg/m³, DNEL 93.6 mg/m³, RCR 0.485 PROC10 Roller application or brushing Use of gloves has been considered additionally. Worker - dermal: Exposure 2.743 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.121 Worker - inhalation: Exposure 79.90 mg/m³, DNEL 93.6 mg/m³, RCR 0.854 PROC11 Non industrial spraying Use of gloves has been considered additionally. Worker - dermal: Exposure 10.71 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.474 Worker - inhalation: Exposure 15.9 mg/m³, DNEL 93.6 mg/m³, RCR 0.170 PROC14 Tableting, compression, extrusion, pelletisation, granulation Worker - dermal: Exposure 3.43 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.152 Worker - inhalation: Exposure 45.54 mg/m³, DNEL 93.6 mg/m³, RCR 0.485

Exposure scenario

Service life of curable plastics containing triethyl phosphate (indoors)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Service life of curable plastics containing triethyl phosphate (indoors)
Product category	PC32 Polymer preparations and compounds.
Article category	AC1 Vehicles AC2 Machinery, mechanical appliances, electrical/electronic articles AC13 Plastic articles
Main sector	SU21 Consumer uses SU22 Professional uses

Environment

Environmental release category	ERC11a Widespread use of articles with low release (indoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.05%
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.05%

Environmental factors not influenced by risk management measures

Service life of curable plastics containing triethyl phosphate (indoors)

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Store substance within a closed system.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

No exposure assessment presented for human health. Qualitative approach used to conclude safe use.

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 0.000681 mg/l, PNEC 298.5 mg/l, RCR 0.00000228 Fresh water: Exposure 0.00548 mg/l, PNEC 0.632 mg/l, RCR 0.00867 Marine water: Exposure 0.000593 mg/l, PNEC 0.0632 mg/l, RCR 0.00938

3. Exposure estimation (Health 1)

Exposure	Consumer - oral, long-term - local and systemic: Exposure 0.000599 mg/kg/day, DNEL 1.66 mg/kg/day, RCR 0.000361 Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). Consumer - dermal Consumer - inhalation Qualitative approach used to conclude safe use.
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Exposure scenario

Industrial use of triethyl phosphate as a catalyst in acetic anhydride manufacture

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use of triethyl phosphate as a catalyst in acetic anhydride manufacture
Product category	PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
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Worker

Process category	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Maximum daily site tonnage: 11667 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Industrial use of triethyl phosphate as a catalyst in acetic anhydride manufacture

Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Store substance within a closed system.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 90%.
Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Covers concentrations up to 5 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Respiration volume under conditions of use: 10 m ³
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Ensure operatives are trained to minimise exposures.
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Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 5.80 mg/l, PNEC 298.5 mg/l, RCR 0.0194 Fresh water: Exposure 0.586 mg/l, PNEC 0.632 mg/l, RCR 0.927 Marine water: Exposure 0.0586 mg/l, PNEC 0.0632 mg/l, RCR 0.927

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
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Industrial use of triethyl phosphate as a catalyst in acetic anhydride manufacture

Exposure

Without local exhaust ventilation

Worker - dermal: Exposure 1.37 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0515

Worker - inhalation: Exposure 1.52 mg/m³, DNEL 93.6 mg/m³, RCR 0.0162

With local exhaust ventilation

Worker - dermal: Exposure 0.137 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00515

Worker - inhalation: Exposure 0.152 mg/m³, DNEL 93.6 mg/m³, RCR 0.00162

Exposure scenario

Service life of curable plastics containing triethyl phosphate (outdoors)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Service life of curable plastics containing triethyl phosphate (outdoors)
Product category	PC32 Polymer preparations and compounds.
Article category	AC1 Vehicles AC2 Machinery, mechanical appliances, electrical/electronic articles AC13 Plastic articles
Main sector	SU21 Consumer uses SU22 Professional uses

Environment

Environmental release category	ERC10a Widespread use of articles with low release (outdoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.05%
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.05%

Environmental factors not influenced by risk management measures

Service life of curable plastics containing triethyl phosphate (outdoors)

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Store substance within a closed system.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

No exposure assessment presented for human health. Qualitative approach used to conclude safe use.

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 0.0436 mg/l, PNEC 298.5 mg/l, RCR 0.000146 Fresh water: Exposure 0.00978 mg/l, PNEC 0.632 mg/l, RCR 0.0155 Marine water: Exposure 0.00102 mg/l, PNEC 0.0632 mg/l, RCR 0.0161

3. Exposure estimation (Health 1)

Exposure	Consumer - oral, long-term - local and systemic: Exposure 0.000599 mg/kg/day, DNEL 1.66 mg/kg/day, RCR 0.000361 Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). Consumer - dermal Consumer - inhalation Qualitative approach used to conclude safe use.
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Exposure scenario

Industrial use in rigid polyurethane foams: handling of raw materials, formulation of plastic preparations, production of foamed articles

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use in rigid polyurethane foams: handling of raw materials, formulation of plastic preparations, production of foamed articles
Product category	PC32 Polymer preparations and compounds.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging SU12 Manufacture of plastics products, including compounding and conversion

Environment

Environmental release category	ERC3 Formulation into solid matrix
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Worker

Industrial use in rigid polyurethane foams: handling of raw materials, formulation of plastic preparations, production of foamed articles

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state Liquid

Amounts used

Maximum daily site tonnage: 16670 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Store substance within a closed system.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Treat air emission to provide a typical removal efficiency of 90%.

Water If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.

Disposal method Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 10 %.

Industrial use in rigid polyurethane foams: handling of raw materials, formulation of plastic preparations, production of foamed articles

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
PROC7 Industrial spraying
Wear a respirator conforming to EN140 with Type A filter or better.
, or:
Ensure use of
Local exhaust ventilation - efficiency of at least [%]: 90

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used ECETOC TRA model.

Environmental exposure STP: Exposure 2.73 mg/l, PNEC 298.5 mg/l, RCR 0.00915
Fresh water: Exposure 0.278 mg/l, PNEC 0.632 mg/l, RCR 0.440
Marine water: Exposure 0.0279 mg/l, PNEC 0.0632 mg/l, RCR 0.441

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Specific conditions Without local exhaust ventilation

Industrial use in rigid polyurethane foams: handling of raw materials, formulation of plastic preparations, production of foamed articles

Exposure	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0152
	Worker - inhalation: Exposure 0.0455 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.000486
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	Worker - dermal: Exposure 1.37 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0515
	Worker - inhalation: Exposure 4.55 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.0486
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0152
	Worker - inhalation: Exposure 13.66 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.146
	PROC4 Chemical production where opportunity for exposure arises
	Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.262
	Worker - inhalation: Exposure 22.8 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.244
	PROC5 Mixing or blending in batch processes
	Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515
	Worker - inhalation: Exposure 22.8 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.244
	PROC7 Industrial spraying
	Use of gloves has been considered additionally.
	Worker - dermal: Exposure 4.29 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.161
	Worker - inhalation: Exposure 22.77 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.243
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515
	Worker - inhalation: Exposure 45.5 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.486
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258
	Worker - inhalation: Exposure 22.8 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.244
	PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
	Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258
	Worker - inhalation: Exposure 22.8 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.244
	PROC15 Use as laboratory reagent.
	Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.0152
	Worker - inhalation: Exposure 22.8 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.244

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation

Industrial use in rigid polyurethane foams: handling of raw materials, formulation of plastic preparations, production of foamed articles

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
Worker - dermal: Exposure 0.0343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00129
Worker - inhalation: Exposure 0.0455 mg/m³, DNEL 93.6 mg/m³, RCR 0.000486
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
Worker - dermal: Exposure 0.137 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00515
Worker - inhalation: Exposure 0.455 mg/m³, DNEL 93.6 mg/m³, RCR 0.00486
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
Worker - dermal: Exposure 0.0343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00129
Worker - inhalation: Exposure 1.366 mg/m³, DNEL 93.6 mg/m³, RCR 0.0146
PROC4 Chemical production where opportunity for exposure arises
Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0304
Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244
PROC5 Mixing or blending in batch processes
Worker - dermal: Exposure 0.0686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00258
Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244
PROC7 Industrial spraying
Worker - dermal: Exposure 2.14 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0805
Worker - inhalation: Exposure 22.77 mg/m³, DNEL 93.6 mg/m³, RCR 0.243
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
Worker - dermal: Exposure 0.137 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00515
Worker - inhalation: Exposure 4.55 mg/m³, DNEL 93.6 mg/m³, RCR 0.0486
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258
Worker - inhalation: Exposure 0.683 mg/m³, DNEL 93.6 mg/m³, RCR 0.00730
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258
Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244
PROC15 Use as laboratory reagent.
Worker - dermal: Exposure 0.0343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00129
Worker - inhalation: Exposure 2.28 mg/m³, DNEL 93.6 mg/m³, RCR 0.0244

Exposure scenario

Service life of PUR foam roofing (outdoors)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Service life of PUR foam roofing (outdoors)
Product category	PC32 Polymer preparations and compounds.
Article category	AC4 Stone, plaster, cement, glass and ceramic articles
Main sector	SU21 Consumer uses SU22 Professional uses
Sector of use	SU19 Building and construction work

Environment

Environmental release category	ERC10a Widespread use of articles with low release (outdoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.05%
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.05%

Environmental factors not influenced by risk management measures

Service life of PUR foam roofing (outdoors)

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Store substance within a closed system.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid , or: Solid
Concentration details	Covers concentrations up to 10 %.

Amounts used

Amount per use: 825 g

Frequency and duration of use

Covers daily exposure up to 0.5hours

Human factors not influenced by risk management

Potentially exposed body parts	Respiration volume under conditions of use: 33 m ³
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Other given operational conditions affecting Non-industrial exposure

Room size	Covers use in room size of 57.3 m ³ .
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Other given operational conditions affecting Non-industrial exposure

Consumer information	Avoid using without gloves.
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3. Exposure estimation (Environment 1)

Assessment method	ConsExpo v4.1
Environmental exposure	STP: Exposure 0.0436 mg/l, PNEC 298.5 mg/l, RCR 0.000146 Fresh water: Exposure 0.00978 mg/l, PNEC 0.632 mg/l, RCR 0.0155 Marine water: Exposure 0.00102 mg/l, PNEC 0.0632 mg/l, RCR 0.0161

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
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Service life of PUR foam roofing (outdoors)

Exposure

Consumer - dermal, short-term - local and systemic: Exposure 0.42 mg/kg/day, DNEL 13.3 mg/kg/day, RCR 0.0316
Consumer - dermal, long-term - local and systemic: Exposure 0.00023 mg/kg/day, DNEL 1.66 mg/kg/day, RCR 0.000139
Consumer - inhalation, short-term - local and systemic: Exposure 0.0019 mg/m³, DNEL 23.12 mg/m³, RCR 0.0000822
Consumer - inhalation, long-term - local and systemic: Exposure 0.000000022 mg/m³, DNEL 2.89 mg/m³, RCR 0.0000000761

Exposure scenario

Recycling of waste PUR foam from manufacturing via adhesive pressing

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Recycling of waste PUR foam from manufacturing via adhesive pressing
Product category	PC32 Polymer preparations and compounds.
Main sector	SU3 Industrial uses
Sector of use	SU12 Manufacture of plastics products, including compounding and conversion

Environment

Environmental release category	ERC3 Formulation into solid matrix
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC21 Low energy manipulation and handling of substances bound in/on materials or articles
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Maximum daily site tonnage: 9500 kg

Recycling of waste PUR foam from manufacturing via adhesive pressing

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.
Technical measures Store substance within a closed system.
STP type Municipal STP.
STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Treat air emission to provide a typical removal efficiency of 90%.
Water If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.
Disposal method Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Concentration details Covers concentrations up to 10 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Recycling of waste PUR foam from manufacturing via adhesive pressing

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 5.91 mg/l, PNEC 298.5 mg/l, RCR 0.0198 Fresh water: Exposure 0.596 mg/l, PNEC 0.632 mg/l, RCR 0.943 Marine water: Exposure 0.0596 mg/l, PNEC 0.0632 mg/l, RCR 0.943

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0152 Worker - inhalation: Exposure 0.0455 mg/m³, DNEL 93.6 mg/m³, RCR 0.000486 PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Worker - dermal: Exposure 1.37 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0515 Worker - inhalation: Exposure 4.55 mg/m³, DNEL 93.6 mg/m³, RCR 0.0486 PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Worker - dermal: Exposure 0.343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0129 Worker - inhalation: Exposure 13.66 mg/m³, DNEL 93.6 mg/m³, RCR 0.146 PROC21 Low energy manipulation and handling of substances bound in/on materials or articles Worker - dermal: Exposure 2.83 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.106

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation
Exposure	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions Worker - dermal: Exposure 0.0343 mg/kg/day, DNEL 22.6 mg/kg/day, RCR 0.00152 Worker - inhalation: Exposure 0.0455 mg/m³, DNEL 93.6 mg/m³, RCR 0.000486 PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Worker - dermal: Exposure 0.137 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00515 Worker - inhalation: Exposure 0.455 mg/m³, DNEL 93.6 mg/m³, RCR 0.00486 PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Worker - dermal: Exposure 0.0343 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00129 Worker - inhalation: Exposure 0.283 mg/m³, DNEL 93.6 mg/m³, RCR 0.00302 PROC21 Low energy manipulation and handling of substances bound in/on materials or articles Worker - dermal: Exposure 1.366 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0146

Exposure scenario Service life of recycled PUR

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Service life of recycled PUR
Product category	PC32 Polymer preparations and compounds.
Article category	AC4 Stone, plaster, cement, glass and ceramic articles AC10 Rubber articles
Main sector	SU21 Consumer uses SU22 Professional uses

Environment

Environmental release category	ERC11a Widespread use of articles with low release (indoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.05%
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.05%

Environmental factors not influenced by risk management measures

Service life of recycled PUR

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Store substance within a closed system.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Landfill.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid , or: Solid
Concentration details	Covers concentrations up to 10 %.

Amounts used

Amount per use: 825 g

Frequency and duration of use

Covers daily exposure up to 0.5hours

Human factors not influenced by risk management

Potentially exposed body parts	Respiration volume under conditions of use: 33 m ³
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Other given operational conditions affecting Non-industrial exposure

Room size	Covers use in room size of 57.3 m ³ .
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Other given operational conditions affecting Non-industrial exposure

Consumer information	Avoid using without gloves.
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3. Exposure estimation (Environment 1)

Assessment method	ConsExpo v4.1
Environmental exposure	STP: Exposure 0.000681 mg/l, PNEC 298.5 mg/l, RCR 0.00000228 Fresh water: Exposure 0.00548 mg/l, PNEC 0.632 mg/l, RCR 0.00867 Marine water: Exposure 0.000593 mg/l, PNEC 0.0632 mg/l, RCR 0.00938

3. Exposure estimation (Health 1)

Assessment method	ConsExpo v4.1
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Service life of recycled PUR

Exposure

Consumer - dermal, short-term - local and systemic: Exposure 0.42 mg/kg/day, DNEL 13.3 mg/kg/day, RCR 0.0316
Consumer - dermal, long-term - local and systemic: Exposure 0.00023 mg/kg/day, DNEL 1.66 mg/kg/day, RCR 0.000139
Consumer - inhalation, short-term - local and systemic: Exposure 0.0019 mg/m³, DNEL 23.12 mg/m³, RCR 0.0000822
Consumer - inhalation, long-term - local and systemic: Exposure 0.000000022 mg/m³, DNEL 2.89 mg/m³, RCR 0.0000000761

Exposure scenario

Formulation into plant protection products

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Formulation into plant protection products
Product category	PC27 Plant protection products.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation into mixture
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Worker

Process category	PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Maximum daily site tonnage: 2222 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Formulation into plant protection products

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
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Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Concentration of substance in product: 5%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Respiration volume under conditions of use: 10 m ³
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Ensure operatives are trained to minimise exposures.
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Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 5.53 mg/l, PNEC 298.5 mg/l, RCR 0.0185 Fresh water: Exposure 0.558 mg/l, PNEC 0.632 mg/l, RCR 0.883 Marine water: Exposure 0.0558 mg/l, PNEC 0.0632 mg/l, RCR 0.883

3. Exposure estimation (Health 1)

Formulation into plant protection products

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 7.59 mg/m³, DNEL 93.6 mg/m³, RCR 0.0811 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 7.59 mg/m³, DNEL 93.6 mg/m³, RCR 0.0811 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 7.59 mg/m³, DNEL 93.6 mg/m³, RCR 0.0811

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 0.0686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00258 Worker - inhalation: Exposure 0.759 mg/m³, DNEL 93.6 mg/m³, RCR 0.00811 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258 Worker - inhalation: Exposure 0.228 mg/m³, DNEL 93.6 mg/m³, RCR 0.00244 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258 Worker - inhalation: Exposure 0.759 mg/m³, DNEL 93.6 mg/m³, RCR 0.00811

Exposure scenario

Use of plant protection products (professional and non-professional users)

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use of plant protection products (professional and non-professional users)
Product category	PC27 Plant protection products.
Main sector	SU21 Consumer uses SU22 Professional uses
Sector of use	SU1 Agriculture, forestry, fishery

Environment

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
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Worker

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC11 Non industrial spraying
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2. Conditions of use affecting exposure (Workers - Health 1)

Control of workers exposure

SU22 Professional uses

Product characteristics

Physical state	Liquid
Concentration details	Concentration of substance in product: 5%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Use of plant protection products (professional and non-professional users)

Human factors not influenced by risk management

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor/outdoor use.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
PROC11 Non industrial spraying
Wear suitable gloves tested to EN374.
Wear a respirator conforming to EN140 with Type A filter or better.
Efficiency of at least 90%

Assumes a good basic standard of occupational hygiene is implemented.

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state Liquid

Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.

Technical measures Store substance within a closed system.

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.

Disposal method Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

SU21 Consumer uses

Product characteristics

Use of plant protection products (professional and non-professional users)

Physical state	Liquid
Concentration details	Concentration of substance in product: 5%

Frequency and duration of use

Covers frequency up to 1 hour/day, 2 days/year, .

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 960 cm ² .
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Other given operational conditions affecting Non-industrial exposure

Setting	Indoor/outdoor use.
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Other given operational conditions affecting Non-industrial exposure

Exposure route	Dermal Inhalation
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3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 0.0136 mg/l, PNEC 298.5 mg/l, RCR 0.0000456 Fresh water: Exposure 0.00678 mg/l, PNEC 0.632 mg/l, RCR 0.0107 Marine water: Exposure 0.000723 mg/l, PNEC 0.0632 mg/l, RCR 0.0114

3. Exposure estimation (Health 1)

Sector of use	SU22 Professional uses
Assessment method	Used ECETOC TRA model.
Exposure	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Indoor use. Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 37.95 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.405 PROC11 Non industrial spraying Indoor use. Use of gloves has been considered additionally. Worker - dermal: Exposure 10.7143 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.4028 Worker - inhalation: Exposure 1.518 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.1622 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Outdoor use. Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 26.57 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.284 PROC11 Non industrial spraying Outdoor use. Use of gloves has been considered additionally. Worker - dermal: Exposure 10.7143 mg/m ³ , DNEL 26.6 mg/m ³ , RCR 0.4028 Worker - inhalation: Exposure 10.626 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.114

3. Exposure estimation (Health 2)

Sector of use	SU21 Consumer uses
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Use of plant protection products (professional and non-professional users)

Exposure

Consumer - dermal, short-term - local and systemic: Exposure 0.000022 mg/kg/day, DNEL 13.3 mg/kg/day, RCR 0.00000165
Consumer - dermal, long-term - local and systemic: Exposure 0.00000012 mg/kg/day, DNEL 1.66 mg/kg/day, RCR 0.0000000723
Consumer - inhalation, short-term - local and systemic: Exposure 0.000045 mg/m³, DNEL 23.12 mg/m³, RCR 0.00000195
Consumer - inhalation, long-term - local and systemic: Exposure 0.000000032 mg/m³, DNEL 2.89 mg/m³, RCR 0.0000000111

Exposure scenario

Formulation of leather coating product

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Formulation of leather coating product
Product category	PC23 Leather treatment products
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC2 Formulation into mixture
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Worker

Process category	PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Maximum daily site tonnage: 2222 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Formulation of leather coating product

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Risk management measures

Good practice	Carefully handle the substance to minimise releases.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
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Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Concentration details	Concentration of substance in product: 1%

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	Respiration volume under conditions of use: 10 m ³
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Other given operational conditions affecting workers exposure

Setting	Indoor.
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Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Ensure operatives are trained to minimise exposures.
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Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.

Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 5.53 mg/l, PNEC 298.5 mg/l, RCR 0.0185 Fresh water: Exposure 0.558 mg/l, PNEC 0.632 mg/l, RCR 0.883 Marine water: Exposure 0.0558 mg/l, PNEC 0.0632 mg/l, RCR 0.883

3. Exposure estimation (Health 1)

Formulation of leather coating product

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 7.59 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.0811 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 7.59 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.0811 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 6.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.258 Worker - inhalation: Exposure 7.59 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.0811

3. Exposure estimation (Health 2)

Assessment method	Used ECETOC TRA model.
Specific conditions	With local exhaust ventilation
Exposure	PROC5 Mixing or blending in batch processes Worker - dermal: Exposure 0.0686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.00258 Worker - inhalation: Exposure 0.759 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.00811 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258 Worker - inhalation: Exposure 0.228 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.00244 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Worker - dermal: Exposure 0.686 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0258 Worker - inhalation: Exposure 0.759 mg/m ³ , DNEL 93.6 mg/m ³ , RCR 0.00811

Exposure scenario

Industrial use of leather coating product

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Industrial use of leather coating product
Product category	PC23 Leather treatment products
Main sector	SU3 Industrial uses
Sector of use	SU5 Manufacture of textiles, leather, fur

Environment

Environmental release category	ERC5 Use at industrial site leading to inclusion into/onto article
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Worker

Process category	PROC7 Industrial spraying PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Maximum daily site tonnage: 25 kg

Frequency and duration of use

Emission days: 220 days/year

Environmental factors not influenced by risk management measures

Industrial use of leather coating product

Dilution Local freshwater dilution factor: 10
Local marine water dilution factor: 100
Receiving surface water flow: 18000 m³/day

Risk management measures

Good practice Carefully handle the substance to minimise releases.
Technical measures Store substance within a closed system.
STP type Municipal STP.
STP details Assumed domestic sewage treatment plant flow: 2000m³/day

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air Treat air emission to provide a typical removal efficiency of 90%.
Water If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.
Disposal method Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Concentration details Covers concentrations up to 1 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts Respiration volume under conditions of use: 10 m³

Other given operational conditions affecting workers exposure

Setting Indoor.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures Ensure operatives are trained to minimise exposures.

Risk management measures

Use suitable eye protection and gloves.
Wear suitable working clothes.
Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation (Environment 1)

Assessment method Used ECETOC TRA model.
Environmental exposure STP: Exposure 6.22 mg/l, PNEC 298.5 mg/l, RCR 0.0208
Fresh water: Exposure 0.627 mg/l, PNEC 0.632 mg/l, RCR 0.992
Marine water: Exposure 0.0628 mg/l, PNEC 0.0632 mg/l, RCR 0.992

Industrial use of leather coating product

3. Exposure estimation (Health 1)

Assessment method	Used ECETOC TRA model.
Specific conditions	Without local exhaust ventilation
Exposure	PROC7 Industrial spraying Worker - dermal: Exposure 42.86 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 1.611 Worker - inhalation: Exposure 151.8 mg/m³, DNEL 93.6 mg/m³, RCR 0.169 PROC10 Roller application or brushing Worker - dermal: Exposure 27.43 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 1.03 Worker - inhalation: Exposure 15.18 mg/m³, DNEL 93.6 mg/m³, RCR 0.162 PROC13 Treatment of articles by dipping and pouring. Worker - dermal: Exposure 13.71 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.515 Worker - inhalation: Exposure 15.18 mg/m³, DNEL 93.6 mg/m³, RCR 0.162

3. Exposure estimation (Health 2)

Specific conditions	With local exhaust ventilation
Exposure	PROC7 Industrial spraying Worker - dermal: Exposure 2.14 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0805 Worker - inhalation: Exposure 7.59 mg/m³, DNEL 93.6 mg/m³, RCR 0.0811 PROC10 Roller application or brushing Worker - dermal: Exposure 1.37 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0515 Worker - inhalation: Exposure 1.52 mg/m³, DNEL 93.6 mg/m³, RCR 0.0162 PROC13 Treatment of articles by dipping and pouring. Worker - dermal: Exposure 0.69 mg/kg/day, DNEL 26.6 mg/kg/day, RCR 0.0259 Worker - inhalation: Exposure 1.52 mg/m³, DNEL 93.6 mg/m³, RCR 0.0162

Exposure scenario

Service life of leather containing triethyl phosphate

Identification

Product name	Triethyl Phosphate
REACH registration number	01-2119492852-28-XXXX
CAS number	78-40-0
EC number	201-114-5
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Service life of leather containing triethyl phosphate
Product category	PC23 Leather treatment products
Article category	AC6 Leather articles
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC11a Widespread use of articles with low release (indoor)
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2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Physical state	Liquid
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Amounts used

Annual amount for wide dispersive uses: 5000 tonnes

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.05%
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.05%

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Receiving surface water flow: 18000 m ³ /day
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Service life of leather containing triethyl phosphate

Risk management measures

Good practice	Carefully handle the substance to minimise releases.
Technical measures	Store substance within a closed system.
STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000m ³ /day

Conditions and measures related to external treatment of waste for disposal

Sludge treatment	Municipal waste assumed to be used as fertiliser.
Disposal method	Municipal waste incineration. , or: Landfill.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

No exposure assessment presented for human health. Qualitative approach used to conclude safe use.

3. Exposure estimation (Environment 1)

Assessment method	Used ECETOC TRA model.
Environmental exposure	STP: Exposure 0.000681 mg/l, PNEC 298.5 mg/l, RCR 0.00000228 Fresh water: Exposure 0.00548 mg/l, PNEC 0.632 mg/l, RCR 0.00867 Marine water: Exposure 0.000593 mg/l, PNEC 0.0632 mg/l, RCR 0.00938

3. Exposure estimation (Health 1)

Exposure	Consumer - oral, long-term - local and systemic: Exposure 0.000599 mg/kg/day, DNEL 1.66 mg/kg/day, RCR 0.000361 Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). Consumer - dermal Consumer - inhalation Qualitative approach used to conclude safe use.
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