

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

1.1. Product identifier

Product form	: Substance
Trade name	: FUMARIC trl
Chemical name	: fumaric acid
EC Index-No.	: 607-146-00-X
EC-No.	: 203-743-0
CAS-No.	: 110-17-8
REACH registration No	: 01-2119552463-40
Type of product	: Acids
Formula	: C4H4O4
Synonyms	: 1,2-ethylene dicarboxylic acid, 2-Butenedioic acid
Product group	: Raw material
Other means of identification	: E297

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

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional users only
Use of the substance/mixture	: Malolactic fermentation inhibitor

1.2.2. Uses advised against

Restrictions on use	: Food/feedstuff additives
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1.3. Details of the supplier of the safety data sheet

Manufacturer

LAFFORT FRANCE SAS
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info@laffort.com - www.laffort.com

Distributor

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Distributor

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Distributor

LAFFORT ARGENTINA
PREDIO INDUSTRIAL, CALLE CASTRO BARROS 1330 CARRODILLA

Distributor

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SOUTH AUSTRALIA
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Manufacturer

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20100 RENTERIA (Guipúzcoa)
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Distributor

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4/B GREENWOODS CLOSE TITIRANGI
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Distributor

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AR- LUJAN DE CUYO - MENDOZA

ARGENTINA

T + 54 261 4962309 - F + 54 261 4964060

info@laffort.com - www.laffort.com

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Australia	NSW Poisons Information Centre The Children's Hospital at Westmead	Locked Bag 4001 NSW 2145 Westmead	13 11 26	
Canada	Ontario Poison Centre (OPC)	The Hospital for Sick Children 555 University Avenue ON M5G 1X8 Toronto	1-800-268-9017 (416) 813-5900	
Canada	BC Drug and Poison Information Centre (DPIC)	655 West 12th Avenue BC V5Z 4R4 Vancouver	1-800-567-8911 (604) 682-5050	
China	National Poison Control Center	Chinese Center for Disease Control and Prevention Nanwei road, No.29 100050 Beijing	+86 10 831 32 046	
Croatia	Centar za kontrolu otrovanja Institut za medicinska istraživanja i medicinu rada	Ksaverska Cesta 2 p.p. 291 10000 Zagreb	+385 1 234 8342	Information available 24/7 in Croatian and English
Czech Republic	Toxikologické informační středisko Klinika pracovního lékařství VFN a 1. LF UK	Na Bojišti 1 120 00 Praha 2	+420 224 919 293 +420 224 915 402	
Denmark	Gifflinjen	Bispebjerg Bakke 23 Opgang 20 C 2400 København NV	+45 82 12 12 12	
Georgia	National Toxicology Information Advisory Center	Tbilisi State Medical University Department of Toxicology - 7 Asatiani St. 380 077 Tbilisi	+995 99 533320	
Greece	Poisons Information Centre Children's Hospital P&A Kyriakou	11762 Athens	+30 2 10 779 3777	
Hungary	Országos Kémiai Biztonsági Intézet Egészségügyi Toxikológiai Tájékoztató Szolgálat	Nagyvárad tér 2. 1437 Budapest, Pf. 839 1097 Budapest	+36 80 20 11 99	
Israel	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096 Haifa	+972 4 854 1900	
Japan	Japan Poison Information Center	Tsukuba Medical Center 1-1-1 Amakubo 305-0005 Tsukuba City, Ibaraki	+81-29-856-3566 +81-72-727-2499	
Jordan	National Drug & Poison Information Center of Jordan		0798506755 00962-6-5353444	
Kazakhstan	Republican Toxicology Center	Tole-bi 93 480083 Almaty	+7 3272 925 868	
Malta	Medicines & Poisons Info Office	Mater Dei Hospital MSD Msida	+356 2545 6504	
New Zealand	National Poisons Centre	Dunedin School of Medicine, University of Otago PO Box 913 9054 Dunedin	0800 764 766 +56 2 2 247 3600	
Poland	National Poisons Information Centre The Nofer Institute of Occupational Medicine (Łódź)	ul. Teresy 8 P.O. BOX 199 90950 Łódź	+48 42 63 14 724	

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Country	Organisation/Company	Address	Emergency number	Comment
Romania	Department of Clinical Toxicology Spitalul de Urgenta Floreasca	Calea Floreasca Bucuresti	+40 21 230 8000	
Russia	Информационно-консультативный центр по токсикологии (RTIAC) Министерство здравоохранения Российской Федерации	3 Сухареvская Площадь Блок 7 129090 г. Москва	+7 495 628 1687 (только на русском)	
Serbia	Nacionalni centar za kontrolu trovanja - VMA	Crnotravska 17 11000 Beograd	+381 11 360 84 40	
Slovenia	Center za klinično toksikologijo in farmakologijo Interna klinika, UKCL	Zaloška 7 1000 Ljubljana	+386 522 52 83	
South Africa	Tygerberg Poison Information Centre	Division of Clinical Pharmacology Faculty of Medicine and Health Sciences Stellenbosch University - PO Box 241 8 000 Cape Town	0861 555 777 +56 2 2 247 3600	
Sweden	Giftinformationscentralen	Solna Strandväg 21 171 54 Solna	112 – begär Giftinformation	
Turkey	Ulusal Zehir Merkezi (UZEM) Refik Saydam Hıfzısıhha Merkezi Başkanlığı	Cemal Gürsel Cd. No: 18 Sıhhiye Çankaya 06590 Ankara	114	Information is provided to public and medical personnel on poisoning incidents via 114.
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Cardiff Centre) University Hospital Llandough	Penlan Road CF64 2XX Llandough	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	Only for healthcare professionals
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	16/17 Framlington Place Newcastle-upon-Tyne NE2 4AB Newcastle	0344 892 0111	Only for healthcare professionals
United States of America	American Association of Poison Control Centers	515 King St., Suite 510 VA 22314 Alexandria	1-800-222-1222 +56 2 2 247 3600	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/ eye irritation, Category 2

H319

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes serious eye irritation.

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2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H319 - Causes serious eye irritation.

Precautionary statements (CLP) :

P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

2.3. Other hazards

Other information :

Toxic to aquatic organisms.

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type :

Mono-constituent

Name	Product identifier	%
FUMARIC trl	CAS-No.: 110-17-8 EC-No.: 203-743-0 EC Index-No.: 607-146-00-X REACH-no: 01-2119552463-40	≤ 100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general :

If symptoms persist call a doctor.

First-aid measures after inhalation :

Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

First-aid measures after skin contact :

After contact with skin, wash immediately and thoroughly with water and soap. If symptoms persist, call a physician.

First-aid measures after eye contact :

In case of eye contact, immediately rinse with clean water for 10-15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion :

If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Immediately give plenty of water. Never give anything by mouth to an unconscious person. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects :

More detailed information: See section 11.

Symptoms/effects after eye contact :

Eye irritation. Serious damage to eyes.

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

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : carbon dioxide (CO₂), powder, alcohol-resistant foam, water spray.
Unsuitable extinguishing media : Do not use water jet.

5.2. Special hazards arising from the substance or mixture

- Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon oxides (CO, CO₂).

5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information : Do not contaminate ground and surface water. Dispose in a safe manner in accordance with local/ national regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear personal protective equipment.
Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.
Measures in case of dust release : Avoid dust formation.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Do not flush into surface water or sewer system.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Mechanically recover the product. Contain leaking substance, pump over in suitable containers. Clean contaminated surfaces with an excess of water.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid dust formation. Store tightly closed in a dry and cool place. Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Keep only in the original container.
Storage conditions : Keep in a well-ventilated room. Store in a dry, cool place. Keep out of direct sunlight. Keep container tightly closed to prevent moisture pick-up.
Incompatible products : Oxidizing agents, bases and reducing agents. Metals.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

FUMARIC trI (110-17-8)	
France - Occupational Exposure Limits	
VME (OEL TWA)	≈ 10 mg/m ³ Total dust

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

FUMARIC trI (110-17-8)	
DNEL/DMEL (Workers)	
Acute - local effects, dermal	1 mg/cm ²
Long-term - systemic effects, dermal	2 – 5,2 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	5,33 mg/m ³
Long-term - local effects, inhalation	32 – 36,6 mg/m ³
DNEL/DMEL (General population)	
Acute - local effects, dermal	0,4 mg/cm ²
Long-term - systemic effects, oral	2,6 – 6 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	9 mg/m ³
Long-term - systemic effects, dermal	2,6 – 6 mg/kg bodyweight/day
Long-term - local effects, dermal	0,5 mg/cm ²
Long-term - local effects, inhalation	1,6 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0,1 mg/l
PNEC aqua (marine water)	0,01 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	87 µg/L
PNEC sediment (marine water)	8,7 µg/L
PNEC (Soil)	
PNEC soil	87 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	3 mg/l

8.1.5. Control banding

No additional information available

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Refer to protective measures listed in Sections 7 and 8. In case of inadequate ventilation wear respiratory protection.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses	Dust	With side shields	EN 166

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Skin and body protection	
Type	Standard
Chemically resistant protective gloves	EN 374

Hand protection:

Protective gloves. Protective gloves made of PVC. Butyl rubber gloves. Nitrile rubber gloves. Natural rubber

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Natural rubber, Nitrile rubber (NBR), Butyl rubber, Polyvinylchloride (PVC)				

Other skin protection**Materials for protective clothing:**

acid resistant clothing

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Do not allow into drains or water courses. Avoid release to the environment.

Other information:

Do not eat, drink or smoke during work. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: white.
Appearance	: Crystals.
Odour	: odourless.
Odour threshold	: Not available
Melting point	: $\approx 129\text{ }^{\circ}\text{C}$ 1.013 hPa
Freezing point	: Not applicable
Boiling point	: $\approx 150\text{ }^{\circ}\text{C}$ 1.013 hPa
Flammability	: $> 349\text{ }^{\circ}\text{C}$ 1.013 hPa Non flammable.
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: $\approx 203\text{ }^{\circ}\text{C}$ Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: $225 - 235\text{ }^{\circ}\text{C}$ 1.013 hPa
pH	: Not available
pH solution	: $\approx 2.50\text{ g/L}$ - $20\text{ }^{\circ}\text{C}$
Viscosity, kinematic	: Not applicable
Solubility	: Water: $> 56\text{ g/100ml}$ $20\text{ }^{\circ}\text{C}$ Ethanol: $\approx 46\text{ g/100ml}$ $20\text{ }^{\circ}\text{C}$ Ether: 0.84 g/100ml $20\text{ }^{\circ}\text{C}$ Acetone: 18 g/100ml $20\text{ }^{\circ}\text{C}$
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: ≈ 0.33 $20\text{ }^{\circ}\text{C}$
Vapour pressure	: $\approx 0.0004\text{ Pa}$ $25\text{ }^{\circ}\text{C}$
Vapour pressure at $50\text{ }^{\circ}\text{C}$: Not available
Density	: $\approx 0.76\text{ g/cm}^3$ $20\text{ }^{\circ}\text{C}$
Relative density	: Not applicable
Relative vapour density at $20\text{ }^{\circ}\text{C}$: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. May be corrosive to some metals.

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10.4. Conditions to avoid

Heat. flames or sparks. Moisture.

10.5. Incompatible materials

Oxidizing agent. Strong bases. mineral acids : concentrated sulphuric acid, phosphoric acid, nitric acid. Alkali metals.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

FUMARIC trI (110-17-8)	
LD50 oral rat	≈ 9300 (2000 - 3500) mg/kg bodyweight
LD50 dermal rabbit	> 20000 mg/kg
LD50 dermal	> 2000 mg/kg bodyweight
LC50 Inhalation - Rat	> 1306 mg/l/4h

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Severe eye irritation
Additional information : Causes serious eye damage.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

FUMARIC trI (110-17-8)	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

FUMARIC trI (110-17-8)	
LC50 - Fish [1]	> 100 mg/l
EC50 - Crustacea [1]	> 240 mg/l
EC50 72h - Algae [1]	≥ 100 mg/l
NOEC chronic algae	≥ 100 mg/l 72h

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12.2. Persistence and degradability

FUMARIC trl (110-17-8)	
Persistence and degradability	Biodegradable.
ThOD	0,718 g O ₂ /g substance
BOD (% of ThOD)	65 % ThOD

12.3. Bioaccumulative potential

FUMARIC trl (110-17-8)	
Partition coefficient n-octanol/water (Log Pow)	≈ 0,33 20°C
Bioaccumulative potential	There is no bioaccumulation.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Other adverse effects : Do not allow to enter drains or water courses

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Do not flush into surface water or sewer system.
Product/Packaging disposal recommendations : Empty remaining contents. Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : Not applicable
UN-No. (IMDG) : Not applicable
UN-No. (IATA) : Not applicable
UN-No. (ADN) : Not applicable
UN-No. (RID) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Proper Shipping Name (ADN) : Not applicable
Proper Shipping Name (RID) : Not applicable

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : Not applicable

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IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

Packing group (ADN) : Not applicable

Packing group (RID) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Inland waterway transport

Not applicable

Rail transport

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

FUMARIC trl is not on the REACH Candidate List

FUMARIC trl is not on the REACH Annex XIV List

FUMARIC trl is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

FUMARIC trl is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

15.1.2. National regulations

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 1191)

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Hazardous Incident Ordinance (12. BImSchV)	: Is not subject of the Hazardous Incident Ordinance (12. BImSchV)
Netherlands	
SZW-lijst van kankerverwekkende stoffen	: The substance is not listed
SZW-lijst van mutagene stoffen	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	: The substance is not listed
Denmark	
Classification remarks	: Emergency management guidelines for the storage of flammable liquids must be followed
Switzerland	
Storage class (LK)	: LK 11/13 - Solids

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

SECTION 16: Other information

Indication of changes:

Revision - See : *.

Indication of changes			
Section	Changed item	Change	Comments
8.1		Added	
11.1	LD50 dermal rabbit	Added	
11.1	LC50 Inhalation - Rat	Added	
11.1	LD50 oral rat	Modified	
12.2	ThOD	Added	
12.2	BOD (% of ThOD)	Added	

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.