SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 8.14
Revision Date 23.12.2024
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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1 Product identifiers

Product name : MSMLS Plate 4 (Water Soluble)

Product Number : MSMLS04
Brand : Sigma
REACH No. :

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

Identified uses : Laboratory chemicals, Manufacture of substances
Uses advised against : For R&D use only. Not for pharmaceutical, household or other uses.

1.3 Details of the supplier of the safety data sheet

Company :

1.4 Emergency telephone

Emergency Phone # : +(44)-870-8200418 (CHEMTREC (GB))
+(353)-19014670 (CHEMTREC Ireland)
001-803-017-9114 (CHEMTREC India)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin irritation, (Category 2)	H315: Causes skin irritation.
Serious eye damage, (Category 1)	H318: Causes serious eye damage.
Skin sensitization, (Category 1)	H317: May cause an allergic skin reaction.
Reproductive toxicity, (Category 1B)	H360FD: May damage fertility. May damage the unborn child.
Specific target organ toxicity - single exposure, (Category 2), Immune system	H371: May cause damage to organs.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word	Danger
Hazard Statements	
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H360FD	May damage fertility. May damage the unborn child.
H371	May cause damage to organs (Immune system).
Precautionary Statements	
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311	IF exposed or concerned: Call a POISON CENTER/ doctor.
Supplemental Hazard Statements	none
	Restricted to professional users.
	Restricted to professional users.

Reduced Labeling (<= 125 ml)

Pictogram

Signal Word	Danger
Hazard Statements	
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H360FD	May damage fertility. May damage the unborn child.
Precautionary Statements	
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Toxicological information:
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

No components need to be disclosed according to the applicable regulations.

Meso-tartrate			
CAS-No. EC-No.	147-73-9 205-696-1 *	Eye Dam. 1; H318	>= 1 - < 3 %
3-Hydroxy-DL-kynurenine			
CAS-No. EC-No.	484-78-6 617-574-9 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
3-Hydroxybutyric acid			
CAS-No. EC-No.	300-85-6 206-099-9 *	Skin Corr. 1B; Eye Dam. 1; H314, H318	>= 1 - < 3 %
(+/-)-4-(1,2-Dihydroxyethyl)pyrocatechol			
CAS-No. EC-No.	28822-73-3 249-260-9 *	Eye Irrit. 2; H319	>= 1 - < 10 %
2-Aminobenzenesulphonic acid			
CAS-No. EC-No.	88-21-1 201-810-9 *	Skin Corr. 1B; H314	>= 1 - < 3 %
Theobromine			
CAS-No. EC-No.	83-67-0 201-494-2	Acute Tox. 4; Eye Irrit. 2; H302, H319	>= 1 - < 10 %

*		
Adenosine 5'-diphosphoribose sodium salt		
CAS-No. 68414-18-6 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
Oxalic acid dihydrate		
CAS-No. 6153-56-6 EC-No. 205-634-3 Index-No. 607-006-00-8 Registration number 01-2119534576-33-XXXX	Acute Tox. 4; Eye Dam. 1; H302, H312, H318	>= 1 - < 3 %
Maleamic acid		
CAS-No. 557-24-4 EC-No. 209-163-4 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
(R)-adrenaline		
CAS-No. 51-43-4 EC-No. 200-098-7 *	Acute Tox. 3; Acute Tox. 2; H301, H331, H310	>= 1 - < 10 %
6-hydroxynicotinic acid		
CAS-No. 5006-66-6 EC-No. 225-682-9 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
N8-Acetylspermidine dihydrochloride		
CAS-No. 34450-15-2 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
norleucine		
CAS-No. 327-57-1 EC-No. 206-321-4 *	Skin Sens. 1; H317	>= 1 - < 10 %
(2S)-2-amino-4-(S-methylsulfonimidoyl) butanoic acid		
CAS-No. 15985-39-4 EC-No. 629-483-1 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
(S)-β-Amino-1H-imidazole-4-propanol dihydrochloride		
CAS-No. 1596-64-1 EC-No. 216-482-2 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %

2'-Deoxycytidine 5'-diphosphate sodium			
CAS-No.	151151-32-5 *	Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H301, H331, H311, H315, H319, H335	>= 1 - < 10 %
N,N'-Pentane-1,5-diyldiammonium dichloride			
CAS-No. EC-No.	1476-39-7 216-022-0 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
2-Methoxyethanol Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)			
CAS-No. EC-No. Index-No. Registration number	109-86-4 203-713-7 603-011-00-4 01-2119494721-33-XXXX	Flam. Liq. 3; Acute Tox. 4; Repr. 1B; STOT SE 1; STOT RE 2; H226, H302, H332, H312, H360FD, H370, H373	>= 1 - < 10 %
L-Anserine nitrate			
CAS-No. EC-No.	10030-52-1 233-079-7 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
N1-Acetylspermine trihydrochloride			
CAS-No.	77928-70-2 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
2-Amino-2-methylpropionic acid			
CAS-No. EC-No.	62-57-7 200-544-0 *	Eye Irrit. 2; H319	>= 1 - < 10 %
mercaptamine			
CAS-No. EC-No.	60-23-1 200-463-0 *	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H302, H315, H319, H335	>= 1 - < 10 %
(-)-5-hydroxy-L-tryptophan			
CAS-No. EC-No.	4350-09-8 224-411-1 *	Acute Tox. 3; H301	>= 1 - < 10 %
Oxfenicine			
CAS-No. EC-No.	32462-30-9 251-061-7 *	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H302, H315, H319, H335	>= 1 - < 10 %

Methyl 4-aminobutanoate hydrochloride			
CAS-No. EC-No.	13031-60-2 629-526-4 *	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335	>= 1 - < 10 %
cocarboxylase (chloride)			
CAS-No. EC-No.	154-87-0 205-836-1 *	Skin Sens. 1; H317	>= 1 - < 10 %
Monophosphothiamine dihydrate			
CAS-No. EC-No.	273724-21-3 208-536-9 *	Skin Sens. 1; H317	>= 1 - < 10 %
acetylcysteine			
CAS-No. EC-No. Registration number	616-91-1 210-498-3 01-2120766167-47-XXXX	Eye Irrit. 2; H319	>= 1 - < 10 %
1,5,10-triazadecane; spermidine			
CAS-No. EC-No.	124-20-9 204-689-0 *	Skin Corr. 1B; Eye Dam. 1; H314, H318	>= 1 - < 3 %

*A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, or the annual tonnage does not require a registration.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Consult a physician. Show this material safety data sheet to the doctor in attendance.Show this material safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides
Oxides of phosphorus
Hydrogen chloride gas
Potassium oxides
Sodium oxides
Cobalt/cobalt oxides
Cadmium/cadmium oxides
Calcium oxide
Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides
Oxides of phosphorus
Hydrogen chloride gas
Potassium oxides
Sodium oxides
Lithium oxides
Cobalt/cobalt oxides
Calcium oxide
Combustible.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Avoid exposure - obtain special instructions before use.Work under hood. Do not inhale substance/mixture.

Advice on protection against fire and explosion
Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place.
Keep locked up or in an area accessible only to qualified or authorized persons.
Storage stability Recommended storage temperature
-20 °C
Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
protective clothing

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type: Filter type P3

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Physical state	solid
b)	Color	No data available
c)	Odor	No data available
d)	Melting point/freezing point	No data available
e)	Initial boiling point and boiling range	No data available
f)	Flammability (solid, gas)	No data available
g)	Upper/lower flammability or explosive limits	No data available
h)	Flash point	40 °C
i)	Autoignition temperature	No data available
j)	Decomposition temperature	No data available
k)	pH	No data available
l)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m)	Water solubility	No data available
n)	Partition coefficient: n-octanol/water	No data available
o)	Vapor pressure	No data available
p)	Density	No data available
	Relative density	No data available
q)	Relative vapor density	No data available
r)	Particle characteristics	
	Particle Size Distribution	D10 = 0.53 µm ± 0.008 µm D50 = 7.45 µm ± 0.062 µm D90 = 51.59 µm ± 0.993 µm Measurement method: ISO 13320
r)	Particle characteristics	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Violent reactions possible with:
Oxidizing agents

10.4 Conditions to avoid
no information available

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity
Acute toxicity estimate Oral - > 2,000 mg/kg
(Calculation method)
Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Acute toxicity estimate Inhalation - 4 h - > 5 mg/l - dust/mist(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations
Acute toxicity estimate Dermal - > 2,000 mg/kg
(Calculation method)

Skin corrosion/irritation
Remarks: Mixture causes skin irritation.

Serious eye damage/eye irritation
Remarks: Mixture causes serious eye damage.

Respiratory or skin sensitization
Mixture may cause an allergic skin reaction.

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
May harm the unborn child.
May impair fertility.

Specific target organ toxicity - single exposure
Mixture may cause damage to organs. - Immune system

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Components

Meso-tartrate

Acute toxicity
Acute toxicity estimate Oral - 2,501 mg/kg
(Expert judgment)
Inhalation: No data available
LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)
Remarks: The value is given in analogy to the following substances: Tartaric acid

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)
Remarks: The value is given in analogy to the following substances: Tartaric acid

Serious eye damage/eye irritation
Eyes - Bovine cornea
Result: Causes serious eye damage.
Remarks: The value is given in analogy to the following substances: Tartaric acid

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: Not a skin sensitizer.
(OECD Test Guideline 429)
Remarks: The value is given in analogy to the following substances: Tartaric acid

Germ cell mutagenicity
Method: OECD Test Guideline 478
Species: Rat - male and female
Result: negative
Remarks: The value is given in analogy to the following substances: Tartaric acid
Method: OECD Test Guideline 475
Species: Rat - male - Bone marrow
Result: negative
Remarks: The value is given in analogy to the following substances: Tartaric acid

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

3-Hydroxy-DL-kynurenine

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: Causes skin irritation.

Serious eye damage/eye irritation
Remarks: Causes serious eye irritation.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

3-Hydroxybutyric acid

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Remarks: Causes serious eye damage.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

(+/-)-4-(1,2-Dihydroxyethyl)pyrocatechol

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: Pyrocatechol

Serious eye damage/eye irritation
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: Pyrocatechol

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

2-Aminobenzenesulphonic acid

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Theobromine

Acute toxicity
LD50 Oral - Rat - 1,265 mg/kg
Remarks: (RTECS)
Acute toxicity estimate Oral - 1,265 mg/kg
(ATE value derived from LD50/LC50 value)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 15 min
(OECD Test Guideline 439)

Serious eye damage/eye irritation
Eyes - Chicken eye
Result: Eye irritation - 10 s

(OECD Test Guideline 438)

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity
Test Type: Ames test
Test system: S. typhimurium
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Adenosine 5'-diphosphoribose sodium salt

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Oxalic acid dihydrate

Acute toxicity
LD50 Oral - Rat - 375 mg/kg
Remarks: (IUCLID)
The value is given in analogy to the following substances: Oxalic acid
Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Symptoms: Possible damages:, mucosal irritations
Acute toxicity estimate Dermal - 1,100.1 mg/kg
(Expert judgment)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)
Remarks: The value is given in analogy to the following substances: Oxalic acid

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Irreversible effects on the eye
(OECD Test Guideline 405)
Remarks: The value is given in analogy to the following substances: Oxalic acid

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)
Remarks: The value is given in analogy to the following substances: Oxalic acid

Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Remarks: The value is given in analogy to the following substances: Oxalic acid
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster lung cells
Result: negative
Remarks: The value is given in analogy to the following substances: Oxalic acid

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Acute inhalation toxicity - Possible damages:, mucosal irritations

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Maleamic acid

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

(R)-adrenaline

Acute toxicity
Acute toxicity estimate Oral - 100.1 mg/kg
(Expert judgment)
Acute toxicity estimate Inhalation - 4 h - 0.51 mg/l - dust/mist
(Expert judgment)
Acute toxicity estimate Dermal - 50.1 mg/kg
(Expert judgment)

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

6-hydroxynicotinic acid

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

N8-Acetylspermidine dihydrochloride

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available
LD50 Intraperitoneal - Mouse - 820 mg/kg
Remarks:
Behavioral:Convulsions or effect on seizure threshold.
Behavioral:Change in motor activity (specific assay).
Lungs, Thorax, or Respiration:Other changes.

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

norleucine

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
May cause an allergic skin reaction.

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

(2S)-2-amino-4-(S-methylsulfonimidoyl) butanoic acid

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: Causes skin irritation.

Serious eye damage/eye irritation
Remarks: Causes serious eye irritation.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

(S)-β-Amino-1H-imidazole-4-propanol dihydrochloride

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Test Type: Human
Test system: lymphocyte
Remarks: Cytogenetic analysis

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

2'-Deoxycytidine 5'-diphosphate sodium

Acute toxicity
Oral: No data available
LD50 Oral - 100 mg/kg
LC50 Inhalation - 4 h - 0.51 mg/l - dust/mist
(Acute toxicity estimate)
LD50 Dermal - 300 mg/kg

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

N,N'-Pentane-1,5-diyldiammonium dichloride

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

2-Methoxyethanol

Acute toxicity
LD50 Oral - Rabbit - 890 mg/kg
Remarks: Behavioral:General anesthetic.
Blood:Other hemolysis with or withot anemia.
(RTECS)
Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.
Acute toxicity estimate Oral - 890 mg/kg
(ATE value derived from LD50/LC50 value)
Acute toxicity estimate Inhalation - 4 h - 11 mg/l - vapor
(Expert judgment)
Symptoms: Irritations of mucous membranes
LD50 Dermal - Rabbit - 1,280 mg/kg
Remarks: (RTECS)
Acute toxicity estimate Dermal - 1,280 mg/kg
(ATE value derived from LD50/LC50 value)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(Directive 67/548/EEC, Annex V, B.4.)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: slight irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
Maximization Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Result: negative
Method: OECD Test Guideline 475
Species: Mouse - male
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
May damage the unborn child.
May damage fertility.

Specific target organ toxicity - single exposure
Causes damage to organs. - Immune system
Acute oral toxicity - Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.
Acute inhalation toxicity - Irritations of mucous membranes

Specific target organ toxicity - repeated exposure
May cause damage to organs through prolonged or repeated exposure.
- thymus
Oral - Testes, thymus

Aspiration hazard
No data available

L-Anserine nitrate

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure

Remarks: No data available
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

N1-Acetylspermine trihydrochloride

Acute toxicity
Oral: No data available
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

2-Amino-2-methylpropionic acid

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Remarks: Causes serious eye irritation.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

mercaptamine

Acute toxicity
LD50 Oral - Mouse - 625 mg/kg
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Test Type: Hamster
Test system: ovary
Remarks: Cytogenetic analysis
Test Type: Hamster
Test system: ovary
Remarks: Sister chromatid exchange
Test Type: Ames test
Result: Equivocal evidence.
Test Type: Human
Test system: fibroblast
Remarks: Unscheduled DNA synthesis

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

(-)-5-hydroxy-L-tryptophan

Acute toxicity
LD50 Oral - Rat - 243 mg/kg
Remarks: (RTECS)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Oxfenicine

Acute toxicity
Oral: No data available
LD50 Oral - 500.1 mg/kg
Inhalation: Irritating to respiratory system.
Dermal: No data available

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Methyl 4-aminobutanoate hydrochloride

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: Causes skin irritation.

Serious eye damage/eye irritation
Remarks: Causes serious eye irritation.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

cocarboxylase (chloride)

Acute toxicity
LD50 Oral - Rat - male - 3,710 mg/kg
Remarks: The value is given in analogy to the following substances: thiamine monophosphate chloride
Inhalation: No data available
Dermal: No data available
LD50 Intravenous - Rat - 465 mg/kg
LD50 Subcutaneous - Rat - 5,000 mg/kg

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 42 min
(OECD Test Guideline 439)
Remarks: The value is given in analogy to the following substances: thiamine monophosphate chloride

Serious eye damage/eye irritation
Eyes - Bovine cornea
Result: No eye irritation - 4 h
(OECD Test Guideline 437)
Remarks: The value is given in analogy to the following substances: thiamine monophosphate chloride

Respiratory or skin sensitization
In vitro study
Result: positive
(OECD Test Guideline 442C)
Remarks: The value is given in analogy to the following substances: thiamine monophosphate chloride
KeratinoSens assay

Result: positive
(OECD Test Guideline 442D)

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
Remarks: The value is given in analogy to the following substances: thiamine monophosphate chloride

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Monophosphothiamine dihydrate

Acute toxicity
LD50 Oral - Rat - male - 3,710 mg/kg
Remarks: (ECHA)
(anhydrous substance)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 42 min
(OECD Test Guideline 439)
Remarks: (anhydrous substance)

Serious eye damage/eye irritation
Eyes - Bovine cornea
Result: No eye irritation - 4 h
(OECD Test Guideline 437)
Remarks: (anhydrous substance)

Respiratory or skin sensitization
In vitro study
Result: positive
(OECD Test Guideline 442C)
Remarks: (anhydrous substance)
KeratinoSens assay
Result: positive
(OECD Test Guideline 442D)
Remarks: (anhydrous substance)

Germ cell mutagenicity
No data available

Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
Remarks: (anhydrous substance)

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

acetylcysteine

Acute toxicity
LD50 Oral - Rat - 5,050 mg/kg
Remarks: (RTECS)
Symptoms: Nausea, Vomiting, Gastrointestinal discomfort
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 42 min
(OECD Test Guideline 439)

Serious eye damage/eye irritation
Remarks: Causes serious eye irritation.
(ECHA)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Acute oral toxicity - Nausea, Vomiting, Gastrointestinal discomfort

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

1,5,10-triazadecane; spermidine

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Remarks: Causes skin burns.

Serious eye damage/eye irritation
Remarks: Causes serious eye damage.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1 Toxicity

Mixture
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties
Product:
Assessment : The substance/mixture does not contain components

considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Toxic to aquatic life with long lasting effects.

Components

Components

Meso-tartrate

Toxicity to fish	static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203) Remarks: The value is given in analogy to the following substances: Tartaric acid
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 93.3 mg/l - 48 h (OECD Test Guideline 202) Remarks: The value is given in analogy to the following substances: Tartaric acid
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata - 51.4 mg/l - 72 h (OECD Test Guideline 201) Remarks: The value is given in analogy to the following substances: Tartaric acid
	static test NOEC - Pseudokirchneriella subcapitata (green algae) - 3.125 mg/l - 72 h (OECD Test Guideline 201) Remarks: The value is given in analogy to the following substances: Tartaric acid
Toxicity to bacteria	static test EC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209) Remarks: The value is given in analogy to the following substances: Tartaric acid

3-Hydroxy-DL-kynurenine

No data available

3-Hydroxybutyric acid

No data available

(+/-)-4-(1,2-Dihydroxyethyl)pyrocatechol

No data available

2-Aminobenzenesulphonic acid
No data available

Theobromine

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)

Adenosine 5'-diphosphoribose sodium salt
No data available

Oxalic acid dihydrate

Toxicity to fish	static test LC50 - Leuciscus idus (Golden orfe) - 160 mg/l - 48 h Remarks: (IUCLID) The value is given in analogy to the following substances: Oxalic acid
Toxicity to daphnia and other aquatic invertebrates	- Daphnia magna (Water flea) - 162.2 mg/l - 48 h (OECD Test Guideline 202) Remarks: The value is given in analogy to the following substances: Oxalic acid

Maleamic acid
No data available

(R)-adrenaline

No data available

6-hydroxynicotinic acid
No data available

N8-Acetylspermidine dihydrochloride
No data available

norleucine

No data available

(2S)-2-amino-4-(S-methylsulfonimidoyl) butanoic acid

No data available

(S)-β-Amino-1H-imidazole-4-propanol dihydrochloride
No data available

2'-Deoxycytidine 5'-diphosphate sodium
No data available

N,N'-Pentane-1,5-diyldiammonium dichloride
No data available

2-Methoxyethanol

Toxicity to fish	static test LC50 - Lepomis macrochirus (Bluegill sunfish) - > 10,000 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	semi-static test EC50 - Daphnia magna (Water flea) - 27,000 mg/l - 48 h (ISO 6341)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 25,500 mg/l - 72 h (ISO 8692)
Toxicity to bacteria	static test EC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Daphnia magna (Water flea) - > 500 mg/l - 21 d (OECD Test Guideline 211)

L-Anserine nitrate

No data available

N1-Acetylspermine trihydrochloride
No data available

2-Amino-2-methylpropionic acid

No data available

mercaptamine
No data available

(-)-5-hydroxy-L-tryptophan
No data available

Oxfenicine
No data available

Methyl 4-aminobutanoate hydrochloride
No data available

cocarboxylase (chloride)

Toxicity to fish	static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203) Remarks: The value is given in analogy to the following

substances: thiamine monophosphate chloride

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201) Remarks: The value is given in analogy to the following substances: thiamine monophosphate chloride

Monophosphothiamine dihydrate

Toxicity to fish	static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203) Remarks: (anhydrous substance)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202) Remarks: (anhydrous substance)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201) Remarks: (anhydrous substance)

acetylcysteine

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata - > 100 mg/l - 72 h (OECD Test Guideline 201) static test NOEC - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)

1,5,10-triazadecane; spermidine

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 3316 IMDG: 3316 IATA: 3316

14.2 UN proper shipping name

ADR/RID: CHEMICAL KIT
IMDG: CHEMICAL KIT
IATA: Chemical kit

14.3 Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	: 2-Methoxyethanol
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	: 2-Methoxyethanol

Other regulations
Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements

H226	Flammable liquid and vapor.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Classification of the mixture		**Classification procedure:**
Skin Irrit.2	H315	Calculation method
Eye Dam.1	H318	Calculation method
Skin Sens.1	H317	Calculation method
Repr.1B	H360FD	Calculation method
STOT SE2	H371	Calculation method

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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