

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended



Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

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

- 1.1. Product identifier**
 Substance / mixture Ethanol denatured (Euro denaturation)
 Other mixture names mixture
 Denatured alcohol
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Mixture's intended use
 Chemical production, analytical chemistry, laboratory synthesis, industrial applications.
Mixture uses advised against
 The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**
Supplier
 Name or trade name Ing. Petr Švec - PENTA s.r.o.
 Address Radiová 1122/1, Praha 10, 102 00
 Czech Republic
 Identification number (CRN) 02096013
 VAT Reg No CZ02096013
 Phone +420 226 060 681
 E-mail info@pentachemicals.eu
 Web address www.pentachemicals.eu
- Competent person responsible for the safety data sheet**
 Name Ing. Petr Švec - PENTA s.r.o.
 E-mail info@pentachemicals.eu
- 1.4. Emergency telephone number**
 European emergency number: 112 112

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**
Classification of the mixture in accordance with Regulation (EC) No 1272/2008
 The mixture is classified as dangerous.
- Flam. Liq. 2, H225
 Eye Irrit. 2, H319
- Most serious adverse physico-chemical effects**
 Highly flammable liquid and vapour.
- Most serious adverse effects on human health and the environment**
 Causes serious eye irritation.
- 2.2. Label elements**
Hazard pictogram
- 

- Signal word**
 Danger
- Hazardous substances**
 propan-2-ol
 butanone
 Denatonium benzoate

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

2.3. Other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture of substances and additives specified below.

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 603-002-00-5 CAS: 64-17-5 EC: 200-578-6 Registration number: 01-2119457-610-43-xxxx	ethanol	93-97,5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 Specific concentration limit: Eye Irrit. 2, H319: C ≥ 50 %	
Index: 603-117-00-0 CAS: 67-63-0 EC: 200-661-7 Registration number: 01-2119457558-25-0000	propan-2-ol	>1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	
Index: 606-002-00-3 CAS: 78-93-3 EC: 201-159-0 Registration number: 01-2119457290-43-XXXX	butanone	>1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	1
CAS: 3734-33-6 EC: 223-095-2	Denatonium benzoate	>0,001	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	

Notes

1 A substance for which exposure limits are set.

Full text of all classifications and hazard statements is given in the section 16.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Cardiac arrest - provide indirect cardiac massage immediately.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists. Rinse skin with water/shower.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes. Provide medical treatment, specialized if possible.

If swallowed

DO NOT INDUCE VOMITING! Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment if the person has any health problems.

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

If inhaled

May cause drowsiness or dizziness.

If on skin

Not expected.

If in eyes

Causes serious eye irritation.

If swallowed

Irritation, nausea.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Closed containers with the product near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide sufficient ventilation. Highly flammable liquid and vapour. Remove all ignition sources. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of gases and vapours in flammable or explosive concentrations and concentrations exceeding the occupational exposure limits. The product should be used only in the areas where it is not in contact with open fire and other ignition sources. Use non-sparking tools. Use of antistatic clothes and footwear is recommended. Prevent contact with skin and eyes. No smoking. Use only non-sparking tools. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight. Keep container tightly closed. Keep cool.

The specific requirements or rules relating to the substance/mixture

Solvent vapours are heavier than air and accumulate especially near the floor where they may form an explosive mixture with the air.

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

European Union

Commission Directive 2000/39/EC

Substance name (component)	Type	Value
butanone (CAS: 78-93-3)	OEL 8 hours	600 mg/m ³
	OEL 8 hours	200 ppm
	OEL 15 minutes	900 mg/m ³
	OEL 15 minutes	300 ppm

8.2. Exposure controls

Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles.

Skin protection

Contaminated skin should be washed thoroughly. Hand protection: Protective gloves resistant to the product (butyl rubber, nitrile rubber).

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

Respiratory protection

Halfmask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of substances are exceeded or in a poorly ventilated environment.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	containing alcohol
Melting point/freezing point	-114.5 °C (96)
Boiling point or initial boiling point and boiling range	78.3 °C
Flammability	data not available
Lower and upper explosion limit	
bottom	3.3 % (96%)
upper	19 % (96%)
Flash point	12.85 °C (1013 hPa)
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	7 (96% solution)
Kinematic viscosity	data not available
Solubility in water	789000mg/lit 20°C
Partition coefficient n-octanol/water (log value)	-0.35 20°C
Vapour pressure	57.26 hPa at 19.65 °C
Density and/or relative density	
Density	0.806 g/cm ³
Relative vapour density	data not available
Particle characteristics	data not available

9.2. Other information

Vapour density	1.6
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SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours may form explosive mixture with air.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Various plastics. Protect against strong acids, bases and oxidizing agents.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

SECTION 11: Toxicological information

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

No toxicological data is available for the mixture.

Acute toxicity

Based on available data the classification criteria are not met.

Ethanol denatured (Euro denaturation)						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	ATE	612 mg/kg				Calculation of value

butanone						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD ₅₀	2738 mg/kg		Rat (Rattus norvegicus)		
Dermal	LD ₅₀	>8000 mg/kg		Rabbit		

Denatonium benzoate						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD ₅₀	612 mg/kg		Rat (Rattus norvegicus)		

ethanol						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD ₅₀	13300 mg/kg		Rat (Rattus norvegicus)		
Dermal	LD ₅₀	>15800 mg/kg		Rabbit		
Inhalation (vapor)	LC ₅₀	124.7 mg/l	4 hours	Rat (Rattus norvegicus)		

propan-2-ol						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD ₅₀	>2000 mg/kg		Rat		
Inhalation (vapor)	LC ₅₀	>5 mg/kg	4 hours	Rat		
Oral	LD ₅₀	4710 mg/kg		Rat		
Inhalation (vapor)	LC ₅₀	72.6 mg/l	4 hours	Rat		
Dermal	LD ₅₀	12870 mg/kg		Rabbit		
Dermal	LD ₅₀	>2000 mg/kg		Rat		

Skin corrosion/irritation

Based on available data the classification criteria are not met.

Corrosivity

ethanol			
Route of exposure	Result	Exposure time	Species
	No effect		Rabbit

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

Serious eye damage/irritation

Causes serious eye irritation.

ethanol			
Route of exposure	Result	Exposure time	Species
	Irritating		Rabbit

propan-2-ol			
Route of exposure	Result	Exposure time	Species
	Highly irritating		Rabbit

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

ethanol				
Route of exposure	Result	Exposure time	Species	Sex
	Indeterminate		Human	

Germ cell mutagenicity

Based on available data the classification criteria are not met.

ethanol				
Result	Exposure time	Specific target organ	Species	Sex
Indeterminate				

Carcinogenicity

Based on available data the classification criteria are not met.

ethanol					
Route of exposure	Parameter	Value	Result	Species	Sex
Oral			Indeterminate	Rat (Rattus norvegicus)	

Reproductive toxicity

Based on available data the classification criteria are not met.

ethanol						
Effect	Parameter	Value	Exposure time	Result	Species	Sex
Developmental toxicity	NOAEL	38 mg/l		Negative	Rat (Rattus norvegicus)	
	NOAEL	5200 mg/kg	24 hours	Indeterminate	Rat (Rattus norvegicus)	

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

ethanol							
Route of exposure	Parameter	Value	Exposure time	Specific target organ	Result	Species	Sex
Inhalation	LOAEL	2.6 mg/l	30 minutes	Nervous system	Drowsiness, Dizziness	Human	
Inhalation	LOAEL	9.4 mg/l		Lungs	Indeterminate	Human	

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

propan-2-ol							
Route of exposure	Parameter	Value	Exposure time	Specific target organ	Result	Species	Sex
Inhalation	NOAEL	12.3 mg/l	24 months	Kidney	Indeterminate	Rat	
Inhalation	NOAEL	12 mg/l	13 weeks	Nervous system	Negative	Rat	
Oral	NOAEL	400 mg/kg/24h	12 weeks	Kidney	Indeterminate	Rat	

Aspiration hazard

Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time. Based on available data the classification criteria are not met.

11.2. Information on other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 12: Ecological information

12.1. Toxicity

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

Acute toxicity

butanone						
Parameter	Value	Exposure time	Species	Environment	Value determination	
LC ₅₀	3220 mg/kg	96 hours	Fish (Oncorhynchus mykiss)			
EC ₅₀	5090 mg/kg	48 hours	Daphnia (Daphnia magna)			
IC ₅₀	>4300 mg/kg		Algae (Selenastrum capricornutum)			

Denatonium benzoate						
Parameter	Value	Exposure time	Species	Environment	Value determination	
LC ₅₀	1000 mg/kg	96 hours	Fish (Oncorhynchus mykiss)			

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

ethanol					
Parameter	Value	Exposure time	Species	Environment	Value determination
EC ₅₀	42 mg/l	96 hours	Fish		Experimentally
EC ₅₀	5012 mg/l	48 hours	Daphnia		Experimentally
NOEC	<500 mg/l	96 hours	Algae		Experimentally

propan-2-ol					
Parameter	Value	Exposure time	Species	Environment	Value determination
LC ₅₀	>100 mg/l	96 hours	Fish		
EC ₅₀	>100 mg/l	48 hours	Daphnia		
NOEC	30 mg/l	21 days	Daphnia		Experimentally
EC ₅₀	1400 mg/l	48 hours	Crustaceans		Experimentally
EC ₅₀	>1000 mg/l	24 hours	Algae		Experimentally
IC ₅₀	>100 mg/l	72 hours	Algae		

12.2. Persistence and degradability

Data for the mixture are not available.

Biodegradability

propan-2-ol					
Parameter	Value	Exposure time	Environment	Value determination	Result
		14 days		Experimentally	

12.3. Bioaccumulative potential

No data are available for either the mixture or the components.

12.4. Mobility in soil

No data are available for either the mixture or the components.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Endocrine disrupting properties

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

SECTION 14: Transport information

- 14.1. UN number or ID number**
UN 1170
- 14.2. UN proper shipping name**
ETHANOL
- 14.3. Transport hazard class(es)**
3 Flammable liquids
- 14.4. Packing group**
II
- 14.5. Environmental hazards**
not relevant
- 14.6. Special precautions for user**
not available
- 14.7. Maritime transport in bulk according to IMO instruments**
not relevant

Additional information

Hazard identification No.	33
UN number	1170
Classification code	F1
Safety signs	3



Tunnel restriction code (D/E)

Air transport - ICAO/IATA

Packaging instructions passenger	353
Cargo packaging instructions	364

Marine transport - IMDG

EmS (emergency plan)	F-E, S-D
MFAG	305

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No chemical safety assessment has been performed for this substance.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

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SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

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Revision date	12th March 2024		

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SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Guidelines for safe handling used in the safety data sheet

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC ₅₀	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC ₅₀	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	17th January 2020	Version	4.0
Revision date	12th March 2024		

IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD ₅₀	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEL	Lowest observed adverse effect level
log Kow	Octanol-water partition coefficient
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquid
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

The version 4.0 replaces the SDS version from 15 December 2022. Changes were made in sections 1, 2, 11, 12, 13, 15 and 16.

More information

Classification procedure - calculation method.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.