

SAFETY DATA SHEET



Dimethyl Ether

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830 - Europe

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Version : 2

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

1.1 Product identifier

Product name : Dimethyl Ether

Chemical name : Dimethyl Ether

Index number : 603-019-00-8

EC number : 204-065-8

CAS number : 115-10-6

INCI Name : DIMETHYL ETHER

REACH Registration number : 01-2119472128-37-0010

Other means of identification : Methane, 1,1'-oxybis-; Methane, oxybis-; Methyl ether; oxybismethane; DME; Methoxymethane; Wood ether; Ether, Dimethyl; Dimethyl oxide; N,N-dimethyl ether; DIMETHYL ETHER PROPELLANT

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

USE: REFRIGERANT; SOLVENT; EXTRACTION AGENT; PROPELLANT FOR SPRAYS; CHEMICAL (REACTION MEDIUM); CATALYST AND STABILIZER IN POLYMERIZATION.

USE ADVISED AGAINST: FUEL (e.g. motor or heating fuel), ADDITIVE/ADMIXTURE TO FUELS (e.g. motor or heating fuels).

1.3 Details of the supplier of the safety data sheet

OOO DME Aerosol

301212 Russia, Tula Oblast, Shchekino Rayon, Pervomaysky,

Simferopolskaya 19 Street

ceo@dme-aerosol.ru

Tel.: +7 (48751) 9-28-42, 9-29-49

Fax: +7 (48751) 9-26-71

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : Not available.

Supplier

Telephone number : ceo@dme-aerosol.ru

Tel.: +7 (48751) 9-28-42, 9-29-49

Fax: +7 (48751) 9-26-71

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

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

Flam. Gas 1, H220

Press. Gas (Comp.), H280

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.

Precautionary statements

General :

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

Prevention :

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

Response :

P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.

Storage :

P403 - Store in well-ventilated place.
P410 - Protect from sunlight.

Disposal :

Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :

Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII :

PBT	P	B	T	vPvB	vP	vB
No	No.	No.	No	No.	No.	No.

Other hazards which do not result in classification :

None known.

SECTION 3: Composition/information on ingredients

3.1 Substance

: Mono-constituent substance

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
dimethyl ether	REACH #: 01-2119472128-37 EC: 204-065-8 CAS: 115-10-6 Index: 603-019-00-8	99.9 - 100	Flam. Gas 1, H220 Press. Gas (Comp.), H280 See Section 16 for the full text of the H statements declared above.	[A]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[A] Constituent

[B] Impurity

[C] Stabilizing additive

Occupational exposure limits, if available, are listed in Section 8.

3.2 Mixture

: Not applicable.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Put on appropriate personal protective equipment (see Section 8).

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Liquid can cause burns similar to frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- Ingestion** : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
frostbite
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
frostbite
- Ingestion** : Adverse symptoms may include the following:
frostbite

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Extinguish fire with dispersed water jets, foam and dry powder or carbon dioxide extinguisher.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). No specific hazard.

6.3 Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance.

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds (in tonnes)**Danger criteria**

Category	Notification and MAPP threshold	Safety report threshold
P2	10 tonne	50 tonne

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters**Occupational exposure limits**

Product/ingredient name	Exposure limit values
dimethyl ether	EU OEL (Europe, 2/2017). Notes: list of indicative occupational exposure limit values TWA: 1000 ppm 8 hours. TWA: 1920 mg/m ³ 8 hours.

Recommended monitoring procedures

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
dimethyl ether	DNEL	Long term Inhalation	194 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	471 mg/m ³	Consumers	Systemic

DEL Summary

: The information contained herein is accurate to the latest knowledge and describes the product from the point of view of help and environmental protection as well as safe handling. The information presented in this SDS refers to the technical product only and will not apply to any processed product. Final determination of the suitability of any materials for the chosen application(s) is the sole responsibility of the user"

PNECs

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
dimethyl ether	-	Fresh water	0,155 mg/l	-
	-	Marine water	0,016 mg/l	-
	-	Sewage Treatment Plant	160 mg/l	-
	-	Fresh water sediment	681 mg/kg	-
	-	Marine water sediment	69 mg/kg	-
	-	Soil	0,045 mg/kg	-

PEC Summary : Assessment Factors

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical product, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn.

Wear suitable gloves tested to EN374.

It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

In case of a long-term direct exposure, butyl rubber > 0.7 mm thick, of minimum time of penetration 480 min should be used.

In case of a short-term direct exposure nitrile latex/ nitrile rubber > 0.4 mm thick, of minimum time of penetration 30 min should be used.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Thermal hazards : If there is a risk of contact with the liquid, all protective equipment worn should be suitable for use with extremely low temperature materials.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Gas. [Liquefied gas.]
Color	: Colorless.
Odor	: Characteristic.
Odor threshold	: Lack of data.
pH	: Lack of data.
Melting point/freezing point	: -141,5°C
Initial boiling point and boiling range	: -24,82°C
Flash point	: Closed cup: -41,11°C
Evaporation rate	: Lack of data.
Flammability (solid, gas)	: Lack of data.
Upper/lower flammability or explosive limits	: Lower: 3,3% Upper: 26,2%
Vapor pressure	: 513,3 kPa [room temperature]
Vapor density	: 1,6 [Air = 1]
Density	: 0,67 g/cm ³ [20°C]
Relative density	: Lack of data.
Solubility(ies)	: Lack of data.
Solubility in water at room temperature (g/l)	: 45,6 g/l
Partition coefficient: n-octanol/water	: 0,07
Auto-ignition temperature	: 226°C
Decomposition temperature	: Lack of data.
Viscosity	: Lack of data.
Explosive properties	: Lack of data.
Oxidizing properties	: Lack of data.
Additional information	: Lack of data.

9.2 Other information

Aerosol product

Heat of combustion	: -31284700 J/kg
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No additional information.

Note: Integers (i.e. 3 or 7) should be read as decimals (3.0 or 7.0)

SECTION 10: Stability and reactivity

- | | |
|---|--|
| 10.1 Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability | : The product is stable. |
| 10.3 Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10.4 Conditions to avoid | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas. |

10.5 Incompatible materials : No specific data.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
dimethyl ether	LC50 Inhalation Gas. LC50 Inhalation Vapor	Rat Rat	164000 ppm 309 g/m ³	4 hours 4 hours

Conclusion/Summary : No known significant effects or critical hazards.

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
dimethyl ether	N/A	N/A	164000	309	N/A
dimethyl ether	N/A	N/A	164000	309	N/A

Irritation/Corrosion

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
dimethyl ether	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
	OECD 473	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic	Negative
	OECD 477	Experiment: In vivo Subject: Insect	Negative

Conclusion/Summary : No mutagenic effect.

Carcinogenicity

Conclusion/Summary : No carcinogenic effect.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
dimethyl ether	Negative	Negative	Negative	Rat	Oral	-

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
No known significant effects or critical hazards.			

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
No known significant effects or critical hazards.			

Aspiration hazard

Product/ingredient name	Result
No known significant effects or critical hazards.	

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
Ingestion : Ingestion of liquid can cause burns similar to frostbite.
Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
Eye contact : Liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : No specific data.
Ingestion : Adverse symptoms may include the following:
frostbite
Skin contact : Adverse symptoms may include the following:
frostbite
Eye contact : Adverse symptoms may include the following:
frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
dimethyl ether	EC10 1600 mg/l	Micro-organism - Pseudomonas putida	-
	EC50 154,9 mg/l	Algae	96 hours
	EC50 >4,4 mg/l	Daphnia	48 hours
	LC50 >4,1 mg/l	Fish	96 hours

Conclusion/Summary : No known significant effects or critical hazards.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
dimethyl ether	OECD 301D Ready Biodegradability - Closed Bottle Test	5 % - Not readily - 28 days	-	Activated sludge

Conclusion/Summary : The substance is stable to hydrolysis and does not biodegrade, but undergoes rapid atmospheric oxidation (atmospheric lifetime = 5.1 days) (Good et al., 1998) and therefore it will not persist in the environment and does not contribute to ozone depletion or global warming.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
dimethyl ether	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
dimethyl ether	0,07	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : 7,8

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
dimethyl ether	No	No.	No.	No	No.	No.	No.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
16 05 04*	gases in pressure containers (including halons) containing hazardous substances




Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	European waste catalogue (EWC)
Cylinder	15 01 11* metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers
Container	15 01 11* metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN1033	UN1033	UN1033
14.2 UN proper shipping name	DIMETHYL ETHER	DIMETHYL ETHER	Dimethyl ether
14.3 Transport hazard class(es)	2 	2.1 	2.1 
14.4 Packing group	-	-	-

14.5 Environmental hazards	No.	No.	No.
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Additional information

- ADR/RID** : **Hazard identification number** 23
Limited quantity 0
Special provisions 662
Tunnel code (B/D)
- ADN** : **Special provisions** 662
- IMDG** : **Emergency schedules** F-D, S-U
- IATA** : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Packaging instructions: Forbidden. Cargo Aircraft Only: 150 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.
Special provisions A1
- 14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

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 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) constituting Appendix C to the Convention concerning International Carriage by Rail (COTIF)

International Maritime Dangerous Goods Code (IMDG CODE)

IATA /International Air Transport Association/ Dangerous Goods Regulations (IATA DGR)

Ordinance of the Minister of Labour and Social Policy of 12 June 2018 concerning maximum permissible concentrations and intensities of agents harmful to health in a work environment (Journal of Laws 2018 item 1286).

Act on Waste of 14 December 2012 (Dz. U. /Journal of Laws/ of 2013, No. 0, item 21)

Act on Packaging and Packaging Waste Management of 13 June 2013 (Dz. U. /Journal of Laws/ of 2013, No. 0, item 888)

Act on Chemical Substances and Their Mixtures of 25 February 2011 (Dz. U. /Journal of Laws/ No. 63, item 322)

Regulation of the Minister of Labour and Social Policy on the general occupational health and safety regulations of 26 September 1997 (Dz. U. /Journal of Laws/ of 2003, No. 169, item 1650 as amended)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

International regulations

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

Changes to the Safety Data Sheet : SECTION 1: Identification of the substance/mixture and of the company/undertaking
SECTION 2: Hazards identification
SECTION 9: Physical and chemical properties
SECTION 11: Toxicological information
SECTION 12: Ecological information

Training advice : Ensure operatives are trained to minimise exposures.

Abbreviations and acronyms : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CMR = Carcinogen, Mutagen or Reproductive toxicant
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DNEL = Derived No Effect Level
EC number = EINECS or ELINCS number
EC50 = Half maximal effective concentration
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
H statement = CLP/GHS Hazard statement
IATA = International Air Transport Association
IC50 = Half maximal inhibitory concentration
IMDG = International Maritime Dangerous Goods
LC50 = Median lethal concentration
LD50 = Median lethal dose
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
STOT = Specific Target Organ Toxicity
SVHC = Substances of Very High Concern
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Gas 1, H220 Press. Gas (Comp.), H280	Expert judgment According to package

Full text of abbreviated H statements

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.

Full text of classifications [CLP/GHS]

Flam. Gas 1, H220	FLAMMABLE GASES - Category 1
Press. Gas (Comp.), H280	GASES UNDER PRESSURE - Compressed gas

Notice to reader

The information contained herein is accurate to the latest knowledge and describes the product from the point of view of help and environmental protection as well as safe handling. The information presented in this SDS refers to the technical product only and will not apply to any processed product. Final determination of the suitability of any materials for the chosen application(s) is the sole responsibility of the user"