

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**Product identifier****Product Name****Di-Trimethylolpropane****Chemical Name**

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol]

CAS No

23235-61-2

Other means of identification**Safety data sheet number** P-0101**Pure substance/mixture** Substance**Recommended use of the chemical and restrictions on use****Application** Chemical intermediate**Uses advised against** Not identified.**Details of the supplier of the safety data sheet****Manufacturer****Supplier****Perstorp Specialty Chemicals AB**
SE-284 80 Perstorp, Sweden
Tel. +46 435 380 00
www.perstorp.com**Perstorp (Shanghai) Chemical Trading Co Ltd**
Room 1501-17, Shanghai Central Plaza,
381 Middle Huai Hai Road
200020 Shanghai, China
Tel. +86 21 6391 0531
www.perstorp.com**E-mail address**

productinfo@perstorp.com

Emergency telephone number**China** (+)86 4001 2001 74 (contract no: 334101)**Asia Pacific** (+)1 760 476 3960 (contract no: 334101)**Section 2: HAZARDS IDENTIFICATION****Emergency Overview**

No immediate serious hazards

Physical state Solid**Color** white**Odor** Odorless**Classification of the substance or mixture**

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS) and GB 30000.2-29-2013.

Label elements**Symbols/Pictograms**

Not applicable

Signal word

Not applicable

Hazard statements

Not applicable

Precautionary statements

Not applicable

Hazards identification

Physical hazards

Not applicable.

Health hazards

Immediate Health Effects: Not applicable.

Chronic effects: Not applicable.

Environmental hazards

Not applicable.

Other hazards

The product as such (flakes) does not cause dust explosions but fresh dust may.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No	Weight-%
2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol]	23235-61-2	>97

Section 4: FIRST AID MEASURES

Description of first aid measures

Inhalation

First aid measures not required, but get fresh air for personal comfort.

Skin contact

First aid measures not required, but wash exposed skin with soap and water for hygienic reasons.

Eye contact

First aid measures not required, but rinse opened eye under running water for personal comfort to avoid mechanical irritation.

Ingestion

Clean mouth with water. If a large quantity has been ingested or if you feel unwell, get medical advice/attention.

Self-protection of the first aider

Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

None known.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

All types of extinguishing media are suitable. Use fire extinguishing methods suitable to surrounding conditions.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors; Carbon monoxide (CO), Carbon dioxide (CO₂).

Protective equipment and precautions for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. If dusty conditions wear respiratory protective device with dust filter, gloves and protective clothing for hygienic reasons. The product is not dust explosive but fresh dust can form an explosive air/dust mixture.

Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment

Cover with plastic sheet to prevent spreading.

Methods for cleaning up

Take up mechanically, placing in appropriate containers for disposal. After cleaning, flush away traces with water.

Section 7: HANDLING AND STORAGE

Precautions for safe handling

Ensure good ventilation at the work station. The product is not dust explosive but fresh dust can form an explosive air/dust mixture. Any unavoidable deposit of dust must be regularly removed.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry and cool place.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection	No specific measures identified. Recommendation(s): Wear safety glasses with side shields (or goggles).
Hand Protection	Protective gloves not really required. However, we recommend using protective gloves made of rubber. Chloroprene rubber, CR, Nitrile rubber, NBR.
Skin and body protection	Normal work clothes for the chemical industry.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are likely to be exceeded or if irritation or other symptoms are experienced, NIOSH/MSHA or EN 136 approved respiratory protection should be worn.
Recommended filter type:	Particle filter device: N95.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Solid
flakes
white

Odor

Odorless

Odor threshold

Not applicable

Property pH

Value

Remarks • Method

No information available

Melting point / freezing point	109 °C	OECD Test No. 102: Melting Point/ Melting Range
Boiling point / boiling range	378 °C	ASTM E 537-02
Flash point		Not applicable
Evaporation rate		No information available
Flammability (solid, gas)		Not flammable (EU Method A.10)
Explosive limits		
Upper explosive limits		No information available
Lower explosive limits		No information available
Vapor pressure	4.7x10 ⁻⁷ Pa	Calculation method MPBPWIN (v1.43)
Vapor density		No information available
Relative density	1.13	ISO 1183-1, @20°C
Water solubility	21 g/L	OECD Test No. 105: Water Solubility @ 20 °C
Solubility(ies)		No information available
Partition coefficient	0.88	OECD Test No. 117: Partition Coefficient (n-octanol/water), HPLC Method @ 20 °C
Autoignition temperature		Not applicable
Decomposition temperature		No information available
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable
Explosive properties	Not explosive. May form explosive mixtures with air	
Oxidizing properties	Not oxidizing.	
Density		See above.
Bulk density	500 kg/m ³	ASTM 1895-96 @20°C

Other Information

No information available

Section 10: STABILITY AND REACTIVITY**Reactivity**

There exists no specific test data for this product. For further information, see the subsequent subsections of this chapter.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

The product as such (flakes) does not cause dust explosions but fresh dust may.

Conditions to avoid

Avoid generation of dust.

Incompatible materials

None known.

Hazardous decomposition productsThermal decomposition can lead to release of irritating and toxic gases and vapors; Carbon monoxide (CO), Carbon dioxide (CO₂).**Section 11: TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Inhalation. Dermal.

Symptoms related to the physical, chemical and toxicological characteristics

See Section 4 for more information.

Numerical measures of toxicity**Acute toxicity**

Product does not present an acute toxicity hazard based on known or supplied information.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)

Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 401: Acute Oral Toxicity	Mouse	Oral	14500	LD50 (lethal dose) mg/kg
OECD Test No. 403: Acute Inhalation Toxicity	Rat	Inhalation	> 5.15	LC0 4h mg/l Maximum attainable concentration

Skin corrosion/irritation

Non-irritating to the skin.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)				
Method	Species	Exposure route	Results:	
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Dermal	Non-irritating to the skin	

Serious eye damage/eye irritation

Non-irritant.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)				
Method	Species	Exposure route	Results:	
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	Eye	The substance was non-irritant	

Respiratory or skin sensitization

Not a skin sensitizer.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)				
Method	Species	Exposure route	Results:	
OECD Test No. 429: Skin Sensitization: Local Lymph Node Assay	Mouse	Skin	Not a skin sensitizer	

Germ cell mutagenicity

Not mutagenic.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)				
Method	Species	Exposure route	Results:	
OECD Test No. 471: Bacterial Reverse Mutation Test		in vitro	Negative	
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test		in vitro	Negative	
OECD 490		in vitro	Negative	

Carcinogenicity

There is no indication for any carcinogenic potential since all in vitro mutagenicity studies are negative.

Reproductive toxicity

Not expected.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 414: Prenatal Development Toxicity Study	Rat	Oral	1000	NOAEL mg/kg bw/day no maternal toxicity
OECD Test No. 414: Prenatal Development Toxicity Study	Rat	Oral	<100	NOAEL mg/kg bw/day developmental toxicity
OECD Test No. 414: Prenatal Development Toxicity Study	Rat	Oral	100	LOAEL mg/kg bw/day developmental toxicity

STOT - single exposure None known

STOT - repeated exposure

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)				
Method	Species	Exposure route	Effective dose	Remarks
OECD Test No. 407: Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	Oral	1000	NOAEL mg/kg bw/day

Aspiration hazard

No hazard identified.

Section 12: ECOLOGICAL INFORMATION

Toxicity

Low toxicity to aquatic organisms.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)					
Method	Species	Exposure route	Effective dose	Exposure time	Remarks
OECD Test No. 203: Fish, Acute Toxicity Test	Brachydanio rerio	Freshwater	>1000	96h	LC50 (lethal concentration) mg/l
OECD Test No. 202: Daphnia sp. Acute Immobilization Test	Daphnia magna	Freshwater	3560	48h	EC50 (effective concentration) mg/l
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Selenastrum capricornutum	Freshwater	>1000	72h	EC50 (effective concentration) mg/l
OECD Test No. 209: Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)	Bacteria toxicity	Freshwater	>1000	3h	EC50 (effective concentration) mg/l

Persistence and degradability

According to OECD guidelines for testing chemicals, a test compound is regarded as easily biodegradable if the loss of DOC within 28 days is greater than 70%. The pass value has to be reached in a 10-day window within the 28-day period of the test. The 10-day window begins when the degree of biodegradation has reached 10% DOC and must end before day 28 of the test. This criterion was not reached for the test article and so the product cannot be regarded as readily biodegradable. After 35 days over 90% of the DOC had been removed from the test system which indicates that, though not readily biodegradable, the product does possess a degree of biodegradability and can be considered inherently biodegradable.

2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] (23235-61-2)			
Method	Value	Exposure time	Results:
OECD Test No. 301A: Ready Biodegradability: DOC Die-Away Test (TG 301 A)	<70%	28d	Not readily biodegradable
OECD Test No. 302B: Inherent Biodegradability: Zahn-Wellens/ EVPA Test	90%	28d	Inherently biodegradable
OECD Test No. 111: Hydrolysis as a Function of pH	-	5d	Stable @ 50°C, pH 4,7,9

Bioaccumulative potential

No bioaccumulation potential.

Chemical Name	Partition coefficient	Bioconcentration factor (BCF)
2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol]	0.88	

Mobility in soil

The substance is not expected to adsorb to a high degree to suspended solids and sediment based upon the log Pow.

Other adverse effects

No information available.

Section 13: DISPOSAL CONSIDERATIONS**Disposal methods**

The product is not classified as hazardous waste. Incinerate at a licensed installation.

Contaminated packaging

Thoroughly emptied and clean packaging may be recycled.

Section 14: TRANSPORT INFORMATION

China Road transport	Not regulated
UN number	Not regulated
UN proper shipping name	Not regulated
Transport hazard class(es)	Not regulated
Packing Group	Not regulated
IMDG Sea transport	Not regulated
UN number	Not regulated
UN proper shipping name	Not regulated
Transport hazard class(es)	Not regulated
Packing Group	Not regulated
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available
IATA Air transport	Not regulated
UN number	Not regulated
UN proper shipping name	Not regulated
Transport hazard class(es)	Not regulated
Packing Group	Not regulated

Section 15: REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****National Regulations****Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of Occupational Disease Hazard Factors - Chemical Factors	Not applicable
Catalogue of Occupational Disease Hazard Factors - Dusts	Not applicable
Catalogue of Occupational Disease Hazard Factors - Biological Factors	Not applicable

Regulations on the Control over Safety of Hazardous Chemicals

Catalog of Hazardous Chemicals	Not applicable
Identification of major hazard installations for dangerous chemicals - Table 1	Not applicable
Identification of major hazard installations for dangerous chemicals - Table 2	Not applicable
List of Dangerous Chemicals for Priority Management - First Batch	Not applicable

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used

Highly Toxic Goods - Time-Weighted Averages (TWAs)	Not applicable
Highly Toxic Goods - Short-Term Exposure Limits (STELs)	Not applicable
Highly Toxic Goods - Maximum Allowable Concentrations (MACs)	Not applicable

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

Catalog of Goods Prohibited from Export (No. 3)	Not applicable
Catalog of Goods Prohibited from Import (No. 6)	Not applicable
Catalog of Toxic Chemicals Severely Restricted From Import and Export	Not applicable

Measures for the Environmental Management of New Chemical Substances

IECSC	Complies
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International Regulations

Ozone-depleting substances (ODS)	Not applicable
Persistent Organic Pollutants	Not applicable
The Rotterdam Convention	Not applicable

Section 16: OTHER INFORMATION

Issue Date	19-Dec-2017
Revision Date	19-Dec-2017
Revision Note	SDS sections updated: 2, 15.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet