

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

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
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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**Classification of the substance or mixture**

Not a dangerous substance or mixture according to the Globally Harmonised System (GHS)

Label elements**Symbols/Pictograms**

Not applicable

Signal word

Not applicable

Hazard statements

Not applicable

Precautionary statements

Not applicable

Other hazards

No special hazards are associated with this product. 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 vapours; 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**

Users are advised to consider national Occupational Exposure Limits or other equivalent values, (if existing).

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: P2.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties****Appearance**

Solid
Flakes
white

Odour

Odourless

Odour threshold

Not applicable

Property**Value****Remarks • Method****pH**

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

Vapour pressure

4.7x10⁻⁷ Pa

Calculation method MPBPWIN (v1.43)

Vapour 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	
Oxidising properties	Not oxidising.	
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 vapours; 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 sensitisation

Not a skin sensitiser.

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

Germ cell mutagenicity

Not mutagenic.

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

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 Algae 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
IMDG Sea transport	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

Section 15: REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

Not applicable.

National Regulations**China**

Not applicable.

Taiwan

Not applicable.

Section 16: OTHER INFORMATION**Key or legend to abbreviations and acronyms used in the safety data sheet**

Not applicable

Issue Date	28-Dec-2016
Revision Date	15-Dec-2016
Revision Note	No information available

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