

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product Name

Di-Trimethylolpropane

Chemical Name

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

CAS No

23235-61-2

EC No

245-509-0

REACH registration number

01-2119456618-28-0000

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

Manufacture of substances. Distribution and storage. Formulations. Use: as a reactive processing aid, in PVC stabilizers and PVC items. Manufacture: of oligomers, of polymers

Professional

Use: in laboratories, in PVC stabilizers and PVC items

Consumer

Use: in PVC stabilizers and PVC items

Uses advised against

Not identified.

1.3. Details of the supplier of the safety data sheet**Manufacturer****Perstorp Specialty Chemicals AB**

SE-284 80 Perstorp, Sweden

Tel. +46 435 380 00

www.perstorp.com

E-mail address

productinfo@perstorp.com

1.4. Emergency telephone number**Europe**

(+1 760 476 3961 (contract no: 334101)

Asia Pacific

(+1 760 476 3960 (contract no: 334101)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

This substance is not classified as dangerous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements

This substance is not classified as dangerous according to regulation (EC) 1272/2008 [CLP]

Symbols/Pictograms

Not applicable

Signal word

None

Hazard statements

Not applicable

Precautionary Statements

Not applicable

2.3. Other hazards

No special hazards are associated with this product. The product as such (flakes) does not cause dust explosions but fresh

dust may. This substance does not meet the criteria for classification as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

| Chemical Name | EC No | CAS No | REACH registration number | Weight-% | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|-----------|------------|---------------------------|----------|---|
| 2,2'-[Oxybis(methylene)]bis[2-ethylpropane-1,3-diol] | 245-509-0 | 23235-61-2 | 01-2119456618-28-0000 | >97 | Not classified |

Full text of H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. 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. |

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

None known.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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.

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6: Accidental release measures

6.1. 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.

6.2. 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.

6.3. 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.

6.4. Reference to other sections

See Section 7,8,13 for more information.

SECTION 7: Handling and storage

7.1. 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.

7.2. Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry and cool place.

7.3. Specific end use(s)

This information is supplied in the present Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Keep personal exposure levels below Derived No Effect Level (DNEL) and national exposure limit values (if existing).

Derived No Effect Level (DNEL) - worker

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

| Type | Exposure route | DNEL | Remarks |
|---------------------------|----------------|------|-------------------|
| Chronic effects, systemic | Dermal | 0.7 | mg/kg bw/d |
| Chronic effects, systemic | Inhalation | 2.4 | mg/m ³ |

Derived No Effect Level (DNEL) - Consumer

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

| Type | Exposure route | DNEL | Remarks |
|---------------------------|----------------|------|-------------------|
| Chronic effects, systemic | Oral | 0.3 | mg/kg bw/d |
| Chronic effects, systemic | Dermal | 0.3 | mg/kg bw/d |
| Chronic effects, systemic | Inhalation | 0.6 | mg/m ³ |

Predicted No Effect Concentration (PNEC)

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

| Environmental compartment | Predicted No Effect Concentration (PNEC) | Remarks |
|----------------------------|--|---------|
| Freshwater | 1 | mg/l |
| Intermittent | 1 | mg/l |
| Impact on Sewage Treatment | 100 | mg/l |
| Marine water | 0.1 | mg/l |

8.2. Exposure controls

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

Environmental exposure controls

Not relevant since not classified as dangerous for the environment.

SECTION 9: Physical and chemical properties

9.1. 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 |

9.2. Other information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Avoid generation of dust.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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**12.1. 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 |

12.2. 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 |

12.3. Bioaccumulative potential

No bioaccumulation potential.

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

12.4. Mobility in soil

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

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products

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

Contaminated packaging

Thoroughly emptied and clean packaging may be recycled.

Waste codes / waste designations according to EWC / AVV

Waste from residues/unused products; 16 03 06.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

ADR Road transport

| | |
|-----------------------------------|----------------|
| 14.1 UN number | Not regulated |
| 14.2 UN proper shipping name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing Group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | None |

RID Rail transport

| | |
|-----------------------------------|----------------|
| 14.1 UN number | Not regulated |
| 14.2 UN proper shipping name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing Group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | None |

IMDG Sea transport

| | |
|---|--------------------------|
| 14.1 UN number | Not regulated |
| 14.2 UN proper shipping name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing Group | Not regulated |
| 14.5 Marine pollutant | Not applicable |
| 14.6 Special precautions for user | None |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

IATA Air transport

| | |
|-----------------------------------|----------------|
| | Not regulated |
| 14.1 UN number | Not regulated |
| 14.2 UN proper shipping name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing Group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | None |

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

Not applicable.

European Union**France**

Occupational Illnesses (R-463-3, France)

Not applicable

Germany

Water hazard class (WGK)

slightly hazardous to water (WGK 1)

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet**

| | |
|---------------|--------------------------|
| Issue Date | 14-Dec-2016 |
| Revision Date | 13-Dec-2016 |
| Revision Note | No information available |

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006, COMMISSION REGULATION (EU) No. 830/2015 of 20 May 2015.

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