

Safety Data Sheet

1,5-Pentanediol

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(30077262/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

1,5-Pentanediol

Recommended use of the chemical and restriction on use

Recommended use*: Chemical used in synthesis and/or formulation of industrial products

Recommended use*: Chemical

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula:	C(5)H(12)O(2)
Chemical family:	diols
Synonyms:	1,5-Pentanediol Pentamethylene Glycol

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

No need for classification according to GHS criteria for this product.

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Label elements

The product does not require a hazard warning label in accordance with GHS criteria.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Under the referenced regulation, this product does not contain any components classified for health hazards above the relevant cut off value.

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air.

If on skin:

Wash thoroughly with soap and water

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If swallowed:

Rinse mouth and then drink 200-300 ml of water.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: No data available.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Symptomatic treatment (decontamination, vital functions).

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5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

If without risk, remove intact containers from exposure to fire, or spray unopened containers with water mist to keep cool. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures, see section 8.

Use personal protective clothing. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice.

Environmental precautions

This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

Methods and material for containment and cleaning up

For large amounts: Dike spillage. Pump off product.
For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
Dispose of absorbed material in accordance with regulations. To clean the floor and all objects contaminated by this material, use plenty of water.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities

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Further information on storage conditions: Containers should be stored tightly sealed in a dry place.
Avoid all sources of ignition: heat, sparks, open flame.

Storage stability:

Storage duration: 24 Months

From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

8. Exposure Controls/Personal Protection

No substance specific occupational exposure limits known.

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified organic vapour cartridge respirator with a particulate pre-filter.

Hand protection:

Chemical resistant protective gloves, chloroprene rubber (Neoprene), nitrile rubber (Buna N),
Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

In order to satisfy general industrial hygiene rules safety glasses with side-shields (e.g. EN 166) are recommended.

Body protection:

Body protection must be chosen based on level of activity and exposure.

No body protection required if used for intended purpose and satisfying generally accepted industrial hygiene rules.

General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form:	oily, liquid	
Odour:	characteristic	
Odour threshold:	not applicable, odour not perceivable	
Colour:	colourless	
pH value:	No data available.	
Melting point:	approx. -16 °C	(other)
	Literature data.	
Boiling point:	237.9 °C	(measured)
	(1,013.25 hPa)	

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Flash point:	142 °C	(DIN 51758, closed cup)
Flammability:	not readily ignited	(other)
Lower explosion limit:	For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Autoignition:	330 °C	(DIN 51794)
SADT:	Study scientifically not justified.	
Vapour pressure:	0.005 hPa (20 °C) Literature data.	(calculated)
Density:	0.99 g/cm ³ (20 °C)	
Vapour density:	> 1 (20 °C) Heavier than air.	(estimated)
Partitioning coefficient n-octanol/water (log Pow):	-0.49 (25 °C) Literature data.	(OECD Guideline 107)
Self-ignition temperature:	not self-igniting	
Thermal decomposition:	440 °C, > 170 kJ/kg Thermal decomposition above the indicated temperature is possible. No decomposition if used correctly. It is not a self-decomposable substance.	
Viscosity, dynamic:	135 mPa.s (20 °C) Literature data.	(calculated (from kinematic viscosity))
Particle size:	The substance / product is marketed or used in a non solid or granular form.	
Solubility in water:	1,000 g/l (20 °C) Literature data., miscible	
Molar mass:	104.15 g/mol	
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

not fire-propagating (other)

Formation of flammable gases: Remarks:

Forms no flammable gases in the presence of water.

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Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Reacts with acids and strong oxidizing agents. Exothermic reaction.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame.

Incompatible materials

acids, acid chlorides, isocyanates

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

440 °C

Thermal decomposition above the indicated temperature is possible. No decomposition if used correctly. It is not a self-decompositionable substance.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard.

Oral

Type of value: LD50

Species: rat (male/female)

Value: approx. 10,000 mg/kg (OECD Guideline 401)

An aqueous solution was tested.

Inhalation

Type of value: LC0

Species: rat (male/female)

Value: 0.000078 mg/l (OECD Guideline 403)

Exposure time: 7 h

The vapour was tested.

No mortality within the stated exposition time as shown in animal studies.

Dermal

Type of value: LD50

Species: rabbit (male)

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Value: > 19,800 mg/kg

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion

Assessment of irritating effects: Not irritating to eyes and skin.

Skin

Species: rabbit

Result: non-irritant

Method: OECD Guideline 404

Eye

Species: rabbit

Result: non-irritant

Method: OECD Guideline 405

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Guinea pig maximization test

Species: guinea pig

Result: Non-sensitizing.

Method: Directive 84/449/EEC, B.6

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organotoxicity was observed after repeated administration to animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity: No data available concerning carcinogenic effects.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The results were determined in a Screening test (OECD 421/422).

Teratogenicity

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Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Other Information

No experimental evidence available for genotoxicity in vitro (Ames test negative).

Medical conditions aggravated by overexposure

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See SDS section 11 - Toxicological information.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) approx. 4,600 mg/l, *Leuciscus idus* (DIN 38412 Part 15, static)
Nominal concentration.

Aquatic invertebrates

EC50 (48 h) > 500 mg/l, *Daphnia magna* (Directive 79/831/EEC, static)
Nominal concentration.

Aquatic plants

EC50 (72 h) > 500 mg/l, *Scenedesmus subspicatus* (DIN 38412 Part 9, static)
Nominal concentration.

Chronic toxicity to fish

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates

Study scientifically not justified.

Assessment of terrestrial toxicity

No data available.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

DIN EN ISO 8192 aquatic
activated sludge, industrial/EC20 (30 min): > 750 mg/l
Nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

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The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Elimination information

95 % BOD of the ThOD (28 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, Inoculum conforming to MITI requirements (OECD 301C))

Assessment of stability in water

According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential

Assessment bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential

No data available.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

Additional information

Add. remarks environm. fate & pathway:

Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

Incinerate in suitable incineration plant, observing local authority regulations.

Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

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Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

NFPA Hazard codes:

Health: 0 Fire: 1 Reactivity: 0 Special:

16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2023/09/01

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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