

Safety Data Sheet

Dipropylamine

Revision date : 2015/03/05

Version: 1.0

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(50039374/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

Dipropylamine

Recommended use of the chemical and restriction on use

* The "Recommended use" identified for this product is provided solely to comply with a US 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

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula: C(6)H(15)N
Chemical family: amines
Synonyms: N-Propyl-1-propanamine

2. Hazards Identification

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

Classification of the product

Flam. Liq.	2	Flammable liquids
Acute Tox.	3 (Inhalation - vapour)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	3 (dermal)	Acute toxicity
Skin Corr./Irrit.	1A	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure

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Aquatic Acute

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Hazardous to the aquatic environment - acute

Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

H225	Highly flammable liquid and vapour.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing vapours.
P243	Take precautionary measures against static discharge.
P260	Do not breathe mist or vapour.
P260	Do not breathe dust or mist.
P273	Avoid release to the environment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P264	Wash with plenty of water and soap thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P242	Use only non-sparking tools.
P240	Ground/bond container and receiving equipment.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P361 + P364	Remove/Take off immediately all contaminated clothing and wash before reuse.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P370 + P378	In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.

Precautionary Statements (Storage):

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P403 + P235 Store in a well-ventilated place. Keep cool.
P233 Keep container tightly closed.
P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection point.

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.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

DANGER:

FLAMMABLE.

CORROSIVE LIQUID.

Corrosive to the skin, eyes and respiratory system.

CAUSES SEVERE BURNS.

RISK OF SERIOUS DAMAGE TO EYES.

MAY BE HARMFUL IF SWALLOWED.

HARMFUL IF INHALED.

HARMFUL IF ABSORBED THROUGH SKIN.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Avoid contact with the skin, eyes and clothing.

Avoid inhalation of mists/vapours.

Use with local exhaust ventilation.

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Wear NIOSH-certified chemical goggles.

Wear full face shield if splashing hazard exists.

Wear chemical resistant protective gloves.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

3. Composition / Information on Ingredients

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

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
71-23-8	>= 0.2 - <= 0.2 %	1-Propanol
102-69-2	>= 0.2 - <= 0.2 %	tripropylamine
107-10-8	>= 0.2 - <= 0.2 %	propylamine
142-84-7	>= 99.0 - <= 100.0 %	dipropylamine

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
142-84-7	99.0 %	dipropylamine
7732-18-5	0.15 %	Water
71-23-8	0.1 %	1-Propanol
107-10-8	0.1 %	propylamine

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4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

If in eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause: weakness, chest discomfort, anxiety, nausea, coughing, headache

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

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

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. Under certain conditions in case of fire other hazardous combustion products may be generated.

Advice for fire-fighters

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

Further information:

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Breathing protection required. Avoid contact with the skin, eyes and clothing.

Environmental precautions

Substance/product is RCRA hazardous due to its properties.

Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Product should be worked up in closed equipment as far as possible. Protect against moisture.

Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:

Vapours may form explosive mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances.

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

8. Exposure Controls/Personal Protection

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Hand protection:

Chemical resistant protective gloves, Consult with glove manufacturer for testing data.

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

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Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapour. Avoid contact with the skin, eyes and clothing. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Store work clothing separately.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	amine-like	
Odour threshold:		Not determined since toxic by inhalation.
Colour:	colourless	
pH value:	11.3	(1 g/l, 25 °C)
Melting point:	-40 °C	(1,013 hPa) Literature data.
Boiling point:	109.3 °C	(1,013 hPa) Literature data.
Flash point:	7 °C	(closed cup) Literature data.
Flammability:	Highly flammable.	
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:	260 °C	
Vapour pressure:	140 mbar	(50 °C)
Density:	0.738 g/cm ³	(20 °C) Literature data.
Relative density:	0.738	(20 °C) Literature data.
Partitioning coefficient n-octanol/water (log Pow):	1.33	(23 °C) (OECD Guideline 107) The data refers to the dissociated form of the substance.
Self-ignition temperature:		not self-igniting
Thermal decomposition:	< 300 °C (DSC (DIN 51007))	
	No exothermic decomposition within the mentioned temperature range. No decomposition if used as directed. It is not a self-decomposable substance.	
Viscosity, dynamic:	0.517 mPa.s	(25 °C) Literature data.
Particle size:		The substance / product is marketed or used in a non solid or granular form.
Solubility in water:	4.64 g/l	(20 °C)
Molar mass:	101.19 g/mol	
Evaporation rate:		Value can be approximated from Henry's Law Constant or vapor pressure.

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10. Stability and Reactivity

Reactivity

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
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Chemical stability

Possibility of hazardous reactions

Strong exothermic reaction with acids.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. See MSDS section 7 - Handling and storage.

Incompatible materials

strong acids

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: carbon oxides, nitrogen oxides, nitrous gases

Thermal decomposition:

< 300 °C (DSC (DIN 51007))

No exothermic decomposition within the mentioned temperature range. No decomposition if used as directed. It is not a self-decomposable 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: Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term skin contact. Of pronounced toxicity after short-term inhalation.

Information on: Dipropylamine

Oral

Type of value: LD50

Species: rat (male/female)

Value: 495 mg/kg (BASF-Test)

Inhalation

Type of value: LC50

Species: rat

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Value: 4.4 mg/l (other)
Exposure time: 4 h

Dermal

Type of value: LD50
Species: rabbit (male)
Value: 925 mg/kg (other)

Assessment other acute effects

Assessment of STOT single:
The available information is not sufficient for evaluation.

Irritation / corrosion

Assessment of irritating effects: Highly corrosive! Damages skin and eyes.

Skin

Species: rabbit
Result: Corrosive.
Method: Draize test

Eye

Species: rabbit
Result: Risk of serious damage to eyes.
Method: BASF-Test

Sensitization

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

Mouse ear swelling test (MEST)

Species: mouse
Result: Non-sensitizing.
Method: other

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No adverse effects were observed after repeated exposure in animal studies.

Information on: Propanol

Genetic toxicity

Assessment of mutagenicity: The substance was not mutagenic in bacteria.

Carcinogenicity

Assessment of carcinogenicity: Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Other Information

development of pulmonary edema

Symptoms of Exposure

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Overexposure may cause: weakness, chest discomfort, anxiety, nausea, coughing, headache

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for 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) 27 mg/l, *Oryzias latipes* (OECD Guideline 203, semistatic)

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

LC50 (96 h) 37 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (Fish test acute)

The statement of the toxic effect relates to the analytically determined concentration. The study was carried out in hard water. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data.

LC50 (96 h) 182 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (Fish test acute, static)

The study was carried out in hard water. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Aquatic invertebrates

EC50 (48 h) 73.34 mg/l, *Daphnia magna* (Directive 79/831/EEC, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic plants

EC50 (72 h) 11.8 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)

The details of the toxic effect relate to the nominal concentration.

EC10 (72 h) 3.6 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)

The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates

No observed effect concentration (21 d) 4.2 mg/l, *Daphnia magna* (OECD Guideline 211)

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

Assessment of terrestrial toxicity

Study scientifically not justified.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aerobic

activated sludge, domestic/EC20 (30 min): > 1,000 mg/l

The details of the toxic effect relate to the nominal concentration.

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Persistence and degradability

Assessment biodegradation and elimination (H₂O)
Readily biodegradable (according to OECD criteria).

Elimination information

70 - 80 % CO₂ formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic)

Information on Stability in Water (Hydrolysis)

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.

Mobility in soil

Assessment transport between environmental compartments

The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information

Other ecotoxicological advice:

Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

13. Disposal considerations

Waste disposal of substance:

Dispose of in a RCRA-licensed facility. Do not discharge into waterways or sewer systems without proper authorization. Dispose of in accordance with national, state and local regulations.

Container disposal:

Empty containers with less than 1 inch of residue may be landfilled at a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

RCRA: U110

D001

14. Transport Information

Land transport

USDOT

Hazard class: 3
Packing group: II
ID number: UN 2383
Hazard label: 3, 8
Proper shipping name: DIPROPYLAMINE

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Sea transport

IMDG

Hazard class: 3
Packing group: II
ID number: UN 2383
Hazard label: 3, 8
Marine pollutant: NO
Proper shipping name: DIPROPYLAMINE

Air transport

IATA/ICAO

Hazard class: 3
Packing group: II
ID number: UN 2383
Hazard label: 3, 8
Proper shipping name: DIPROPYLAMINE

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Chronic; Acute; Fire

Reportable Quantity for release: 5,000 lb

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
MA, NJ, PA	142-84-7	dipropylamine
MA, NJ, PA	71-23-8	1-Propanol
MA, NJ, PA	107-10-8	propylamine

NFPA Hazard codes:

Health : 3 Fire: 3 Reactivity: 0 Special:

HMIS III rating

Health: 3 Flammability: 3 Physical hazard: 0

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	3 (dermal)	Acute toxicity
Acute Tox.	3 (Inhalation - vapour)	Acute toxicity
Skin Corr./Irrit.	1A	Skin corrosion/irritation
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Aquatic Acute	3	Hazardous to the aquatic environment - acute
Flam. Liq.	2	Flammable liquids
Eye Dam./Irrit.	1	Serious eye damage/eye irritation

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16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2015/03/05

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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