1. Identification

Product identifier used on the label

Propylamine

Recommended use of the chemical and restriction on use

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

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

Other means of identification

Molecular formula: C(CH3)3H(N)
Chemical family: aliphatic, amine
Synonyms: n-Propylamine

2. Hazards Identification


Classification of the product

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq.</td>
<td>2</td>
<td>Flammable liquids</td>
</tr>
<tr>
<td>Met. Corr.</td>
<td>1</td>
<td>Corrosive to metals</td>
</tr>
<tr>
<td>Acute Tox.</td>
<td>3</td>
<td>(Inhalation - vapour)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>Acute Tox.</td>
<td>4</td>
<td>(oral)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>Acute Tox.</td>
<td>3</td>
<td>(dermal)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>Skin Corr./Irrit.</td>
<td>1B</td>
<td>Skin corrosion/irritation</td>
</tr>
<tr>
<td>Eye Dam./Irrit.</td>
<td>1</td>
<td>Serious eye damage/eye irritation</td>
</tr>
</tbody>
</table>
Safety Data Sheet
Propylamine
Revision date: 2016/12/08
Version: 2.1

STOT SE 3 (irritating to respiratory system) Specific target organ toxicity — single exposure
Aquatic Acute 2 Hazardous to the aquatic environment - acute

Label elements

Pictogram:

Signal Word:
Danger

Hazard Statement:
H225 Highly flammable liquid and vapour.
H290 May be corrosive to metals.
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.
H401 Toxic 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.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/gas/mist/vapours.
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.
P234 Keep only in original container.

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.
P303 + P361 + P352 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P370 + P378 In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.
P390 Absorb spillage to prevent material damage.

Precautionary Statements (Storage):
P403 + P235 Store in a well-ventilated place. Keep cool.
P233 Keep container tightly closed.
P405 Store locked up.
P406 Store in corrosive resistant/… container with a resistant inner liner.

Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

Hazard 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


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Weight %</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-10-8</td>
<td>99.92 - 99.98%</td>
<td>propylamine</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Weight %</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-10-8</td>
<td>99.0%</td>
<td>propylamine</td>
</tr>
<tr>
<td>71-23-8</td>
<td>&lt; 1.0%</td>
<td>1-Propanol</td>
</tr>
<tr>
<td>142-84-7</td>
<td>&lt; 1.0%</td>
<td>dipropylamine</td>
</tr>
<tr>
<td>7664-41-7</td>
<td>&lt; 1.0%</td>
<td>ammonia</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>&lt; 1.0%</td>
<td>Water</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

Description of first aid measures

General advice:
Remove contaminated clothing.

If inhaled:
Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:
Wash affected areas thoroughly with soap and water. Remove contaminated clothing. Immediate medical attention required.

If in eyes:
Flush immediately with water for at least 30 minutes. Hold eyelids open to facilitate rinsing. Immediate medical attention required.

If swallowed:
Do not induce vomiting. Rinse mouth and then drink plenty of water. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.
Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further symptoms are possible

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, foam, dry powder, gaseous extinguishing media, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water

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:
Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition. If exposed to fire, keep containers cool by spraying with water. Fight fire from maximum distance. Firefighting should be done from explosion resistant locations.

6. Accidental release measures

Further accidental release measures:
An explosive atmosphere can be formed in the case of a spillage. If large amounts are released contact the fire service.

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. 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:
See MSDS section 5 - Fire fighting measures.

**Conditions for safe storage, including any incompatibilities**
Segregate from acids and acid forming substances.

Suitable materials for containers: Carbon steel (Iron), Stainless steel 1.4401, Stainless steel 1.4301 (V2), High density polyethylene (HDPE), glass, Low density polyethylene (LDPE)

Unsuitable materials for containers: Aluminium, Paper/Fibreboard, board

Further information on storage conditions: Avoid extreme heat. Keep container tightly closed and in a cool place. Keep away from sources of ignition - No smoking.

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 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 (or equivalent) organic vapour/particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. 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.

**Body protection:**
chemical-protection suit (f.e. according to EN 14605)

**General safety and hygiene measures:**
Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact.
9. Physical and Chemical Properties

Form: liquid
Odour: ammonia-like
Odour threshold: Not determined since toxic by inhalation.
Colour: colourless
pH value: 12.6
(100 g/l, 20 °C)
Literature data.
Melting point: -83 °C
(1,030 hPa)
(20 °C)
Literature data.
Boiling point: 47.2 °C
Literature data.
Flash point: <-35 °C
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: 10.4 % (V)
Literature data.
Autoignition: 317 °C
Literature data.
Vapour pressure: 330 hPa
(19.6 °C)
(measured)
Density: 0.72 g/cm3
(20 °C)
Literature data.
Relative density: 0.72
(20 °C)
(air)
Literature data.
Partitioning coefficient n-octanol/water (log Pow): 0.28
(23 °C)
(measured)
Self-ignition temperature: not self-igniting
Thermal decomposition: 30 - 300 °C (DSC (DIN 51007))
No exothermic decomposition within the mentioned temperature range. No decomposition if used as directed. It is not a self-decompositionable substance.
Viscosity, dynamic: 0.353 - 0.37 mPa.s
(25 °C)
Literature data.
Solubility in water: miscible, Literature data.
Miscibility with water: miscible in all proportions
Molar mass: 59.11 g/mol
Evaporation rate: Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

Corrosion to metals:
A metal corrosive effect is expected due to the pH value.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing. (other)

Formation of flammable gases:

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

**Chemical stability**

The product is stable if stored and handled as prescribed/indicated. The product may become unstable at elevated temperatures and under pressure.

**Possibility of hazardous reactions**

The product is chemically stable.

**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:
- 30 - 300 °C, 2 K/min (DSC (DIN 51007))
- No exothermic decomposition within the mentioned temperature range. No decomposition if used as directed. 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: Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term skin contact. Of pronounced toxicity after short-term inhalation. The inhalation of a highly enriched/saturated vapor-air-mixture represents a severe acute hazard.

**Oral**

Type of value: LD50
Species: rat (male/female)
Value: 370 mg/kg (BASF-Test)

**Inhalation**

Type of value: LC50
Species: rat (male)
Value: 6.32 mg/l (BASF-Test)
Exposure time: 4 h
The vapour was tested.

**Dermal**

Type of value: LD50
Species: rabbit (male)
Value: 403 mg/kg

Assessment other acute effects
Assessment of STOT single:
The available information is not sufficient for the evaluation of specific target organ toxicity.

Irritation / corrosion
Assessment of irritating effects: Corrosive! Damages skin and eyes.

Skin
Species: rabbit
Result: Corrosive.

Sensitization
Assessment of sensitization: Study scientifically not justified.

Aspiration Hazard
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation.

Genetic toxicity
Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition. The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity
Assessment of reproduction toxicity: Animal studies gave no indication of a fertility impairing effect at doses which were not toxic to the parental animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Teratogenicity
Assessment of teratogenicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Other Information
Irritating to the respiratory organs.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further symptoms are possible

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 MSDS section 11 - Toxicological information.
12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity:
Acutely toxic for aquatic organisms. The effect strongly depends on the pH-value. 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. 46 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
Nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample. After neutralization, it is no longer toxic.

Aquatic invertebrates
EC50 (48 h) 70.7 mg/l, Daphnia magna (Directive 79/831/EEC, static)
Nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample. After neutralization, it is no longer toxic.

Aquatic plants
Toxic limit concentration (192 h) 1.7 mg/l, Scenedesmus quadricauda (DIN 38412 Part 9)
The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample. Nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data.

Toxic limit concentration (192 h) 2.3 mg/l, Scenedesmus quadricauda (DIN 38412 Part 9)
The product will cause changes in the pH value of the test system. The result refers to a neutralized sample. Nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data.

EC0 (72 h) 1.081 mg/l (growth rate) (calculated)

Toxic limit concentration (96 h) 4 mg/l, Scenedesmus quadricauda (static)
Literature data. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Toxic limit concentration (8 d) 0.54 mg/l (growth rate), Scenedesmus quadricauda (static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

EC50 (72 h) 0.23 mg/l (growth rate), Desmodesmus subspicatus (Guideline 92/69/EEC, C.3, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Nominal concentration.

Chronic toxicity to fish
Study scientifically not justified.

Chronic toxicity to aquatic invertebrates
No observed effect concentration (7 d) 1.5 mg/l, Ceriodaphnia dubia (semistatic)
Nominal values (confirmed by concentration control analytics) The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

No observed effect concentration (7 d) 3.2 mg/l, Ceriodaphnia dubia (semistatic)
Nominal values (confirmed by concentration control analytics) 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 does not need to be conducted.

**Microorganisms/Effect on activated sludge**

**Toxicity to microorganisms**
OECD Guideline 209 aquatic activated sludge, industrial/EC20 (30 min): > 1,995 mg/l

**Persistence and degradability**

**Assessment biodegradation and elimination (H2O)**
Readily biodegradable (according to OECD criteria). The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

**Elimination information**
85 % BOD of COD (14 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, Inoculum conforming to MITI requirements (OECD 301C))
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data.

90 % BOD of the ThOD (14 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (Inoculum conforming to MITI requirements (OECD 301C))
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data.

**Information on Stability in Water (Hydrolysis)**
Study scientifically not justified.

**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.
The data refer to the uncharged form of the substance.

**Additional information**

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

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:** U194

14. Transport Information

**Land transport**
USDOT
- Hazard class: 3
- Packing group: II
- ID number: UN 1277
- Hazard label: 3, 8
- Proper shipping name: PROPYLAMINE

**Sea transport**
IMDG
- Hazard class: 3
- Packing group: II
- ID number: UN 1277
- Hazard label: 3, 8
- Marine pollutant: NO
- Proper shipping name: PROPYLAMINE

**Air transport**
IATA/ICAO
- Hazard class: 3
- Packing group: II
- ID number: UN 1277
- Hazard label: 3, 8
- Proper shipping name: PROPYLAMINE

15. Regulatory Information

**Federal Regulations**

**Registration status:**
Chemical TSCA, US released / listed

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

**EPCRA 313:**
Safety Data Sheet
Propylamine
Revision date: 2016/12/08
Page: 12/13
Version: 2.1
(30036853/SDS_GEN_US/EN)

CAS Number | Chemical name
--- | ---
7664-41-7 | ammonia

CERCLA RQ | CAS Number | Chemical name
--- | --- | ---
5000 LBS | 107-10-8; 142-84-7 | propylamine; dipropylamine
1000 LBS | 1336-21-6 | Ammonium hydroxide
100 LBS | 7664-41-7; 71-23-8 | ammonia; 1-Propanol

Reportable Quantity for release: 5,000 lb

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

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2016/12/08

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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