

# Safety data sheet

## Pyrrolidine pure

### 1. Substance/preparation and company identification

Molecular formula: C(4)H(9)N

Chemical family: heterocyclic

Synonyms: Pyrrolidine

### 2. Composition/information on ingredients

**CAS Number Content (W/W) Chemical name**

123-75-1 >= 99.0 % pyrrolidine

7732-18-5 <= 0.5 % Water

### 3. Hazard identification

#### Emergency overview

DANGER: FLAMMABLE. CORROSIVE LIQUID. HARMFUL IF SWALLOWED.

HARMFUL IF INHALED.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Corrosive to the skin, eyes and respiratory system.

CAUSES SEVERE BURNS.

RISK OF SERIOUS DAMAGE TO EYES.

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.

#### Potential health effects

##### Primary routes of exposure

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

**Medical conditions aggravated by overexposure:**

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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.

### 4. 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 with water while removing contaminated clothing. Remove contaminated clothing.

Immediate medical attention required. Wash soiled clothing immediately.

#### If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

#### If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

### 5. Fire-fighting measures

Flash point: 3 °C (DIN 51755)

Autoignition: 345 °C (DIN 51794)

Lower explosion limit: 1.6 %(V)

Upper explosion limit: 10.6 %(V)

**Suitable extinguishing media:**

water fog, foam, dry extinguishing media

**Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

**Further information:**

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

**NFPA Hazard codes:**

Health : 3 Fire: 3 Reactivity: 0 Special:

**6. Accidental release measures****Personal precautions:**

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

**Environmental precautions:**

Substance/product is RCRA hazardous due to its properties.

**Cleanup:**

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

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**7. Handling and storage****Handling****General advice:**

See MSDS section 10 - Stability and reactivity. See MSDS section 5 - Fire fighting measures.

**Protection against fire and explosion:**

See MSDS section 5 - Fire fighting measures.

**Storage****General advice:**

Containers should be stored tightly sealed in a dry place.

Avoid extreme heat. Keep away from sources of ignition - No smoking.

**Storage incompatibility:**

General: Segregate from acids and acid forming substances.

**Storage stability:**

Storage duration: 24 Months

**8. Exposure controls and 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. 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:**

Protective suit

**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: amine-like

Colour: colourless to yellow

pH value: 12.9 ( 100 g/l, 20 °C)

Melting point: < -60 °C

Boiling range: 86 - 88 °C

Vapour pressure: 65 mbar ( 20 °C)

Density: 0.866 g/cm<sup>3</sup> ( 20 °C)

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Partitioning coefficient octanol/

water (log Pow):

0.22

Viscosity, dynamic: 0.94 mPa.s ( 20 °C)

Solubility in water: ( 20 °C) miscible

### 10. Stability and reactivity

#### Substances to avoid:

mineral acids

#### Hazardous reactions:

The product is chemically stable.

Reacts with oxidizing agents.

#### Corrosion to metals:

Corrosive effect on metals.

### 11. Toxicological information

#### Acute toxicity

##### Oral:

LD50/rat: 433 mg/kg

##### Inhalation:

LC50/rat: 11.7 mg/l / 4 h

rat: / 3 min(IRT)

Inhalation-risk test (IRT): Mortality within 2 minutes as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents a severe hazard.

##### Skin irritation:

rabbit: Corrosive. (BASF-Test)

##### Eye irritation :

As the product corrodes the skin, it can be expected to have a similar effect on the eyes also.

#### Chronic toxicity

##### Other information:

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

Together with nitrosating agents (f. i. nitrites, nitrogen oxides) nitrosamines may be formed under certain conditions. Nitrosamines showed a carcinogenic effect in animal experiment.

### 12. Ecological information

#### Environmental fate and transport

##### Biodegradation:

Test method: DIN 38409 Part 51

Method of analysis: BOD or COD

Degree of elimination: > 60 %

Evaluation: Readily biodegradable.

##### Biochemical oxygen demand (BOD):

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: 1,930 mg/g

#### Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

#### Environmental toxicity

##### Acute and prolonged toxicity to fish:

zebra fish/LC50: > 100 - < 220 mg/l

##### Toxicity to microorganisms:

Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

##### 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:** D001

D002

## 14. Transport information

### Land transport

*USDOT*

Proper shipping name: PYRROLIDINE

Hazard class: 3

ID-number: UN 1922

Packing group: II

### Sea transport

*IMDG*

Proper shipping name: PYRROLIDINE

Hazard class: 3

ID-number: UN 1922

Packing group: II

Marine pollutant: NO

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### Air transport

*IATA/CAO*

Proper shipping name: PYRROLIDINE

Hazard class: 3

ID-number: UN 1922

Packing group: II

## 15. Regulatory information

### Federal Regulations

#### Registration status:

TSCA, US released / listed

Unspecified

**OSHA hazard category:** Flammable Liquid, OSHA PEL established, ACGIH TLV established, Acute target organ effects reported, Corrosive to skin and/or eyes

#### CERCLA RQ CAS Number Chemical name

100 LBS 123-75-1 pyrrolidine

**SARA hazard categories (EPCRA 311/312):** Acute, Fire

#### State regulations

##### State RTK

**CAS Number Chemical name State RTK**

123-75-1 pyrrolidine MA, NJ, PA

## 16. Other information

### HMIS III rating

Health: 3 Flammability: 3 Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

### Local contact information

prod\_reg@basf.com

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