BASF
The Chemical Company

# Safety data sheet
## tert.-Butylamine



## 1. Substance/preparation and company identification

Company
BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP

| | |
|---|---|
| Molecular formula: | C(4)H(11)N |
| Chemical family: | amine, aliphatic |
| Synonyms: | 2-Methyl-2-propane amine |

## 2. Composition/information on ingredients

| CAS Number | Content (W/W) | Chemical name |
|---|---|---|
| 75-64-9 | > 99.5 % | tert-butylamine |

## 3. Hazard identification

**Emergency overview**

DANGER: FLAMMABLE. CORROSIVE. TOXIC LIQUID. CORROSIVE TO SKIN.
CORROSIVE LIQUID.
Causes digestive tract burns.
CAUSES SKIN BURNS.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
Prolonged or repeated contact may result in dermatitis.
May cause pulmonary edema.
CAUSES EYE BURNS.
CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
Use with local exhaust ventilation.
Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.
Wear full face shield if splashing hazard exists.

**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.

**Acute toxicity:**
Toxic if swallowed. Ingestion of alkaline corrosives such as tert-Butylamine may cause burns to the lips, tongue, oral mucosa and esophagus. Vomiting and abdominal pain may also occur. Inhalation of vaporized

caustics may result in dyspnea and pulmonary edema. Acute inhalation overexposure may result in erythema, faintness, cough, chest pains, dizziness, depression, convulsions, narcosis and possibly unconsciousness.

**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.

**Potential environmental effects**

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

## 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.

**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.

**Note to physician**
Symptoms: Overexposure may cause:, dyspnea, coughing

## 5. Fire-fighting measures

| | | |
|---|---|---|
| Flash point: | -38 °C | (DIN 51755) |
| | -38 °C | (closed cup) |
| Autoignition: | 375 °C | (DIN 51794) |
| Lower explosion limit: | 1.5 %(V) | ( -37.5 °C) |
| Upper explosion limit: | 9.2 %(V) | ( -10.0 °C) |
| Flammability: | Highly flammable. | (other) |

**Suitable extinguishing media:**
water, dry extinguishing media, foam

**Hazards during fire-fighting:**

No particular hazards known.

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

**Further information:**
If exposed to fire, keep containers cool by spraying with water. Do not spray water directly on fire, product will float and could be reignited on surface of water. Do not flood burning material with water due to potential spreading of fire.

**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.

## 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:**
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

**Storage**

**General advice:**
Keep container tightly closed in a cool, well-ventilated place.
Avoid extreme heat. Keep away from sources of ignition - No smoking.

**Storage stability:**
Storage temperature: <= 35 °C
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.

**Hand protection:**
Chemical resistant protective gloves

**Eye protection:**
Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

**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).

**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 | |
| pH value: | 12.1 | ( 100 g/l) |
| Melting point: | -67 °C | |
| Boiling point: | 44 °C | |
| Vapour pressure: | 300 hPa | ( 20 °C) |
| | 1300 hPa | ( 50 °C) |
| Density: | 0.693 g/cm3 | ( 20 °C) |
| Relative density: | 0.6919 - 0.6951 | ( 20 °C) (other) |
| Partitioning coefficient n-octanol/water (log Pow): | 0.4 | ( 25 °C) (Calculation Hansch/Leo) |
| Viscosity, dynamic: | 0.5 mPa.s | ( 20 °C) |
| Solubility in water: | 1,000 g/l | ( 25 °C) |
| Miscibility with water: | | miscible in all proportions |
| Solubility (qualitative): | miscible<br>solvent(s): alcohols, ether, | |

## 10. Stability and reactivity

**Substances to avoid:**
oxidizing agents

**Hazardous reactions:**
Strong exothermic reaction with acids.
The product is chemically stable.

**Corrosion to metals:**
No corrosive effect on metal.

**Oxidizing properties:**
not fire-propagating (other)

## 11. Toxicological information

**Acute toxicity**

**Oral:**
LD50/rat: 464 mg/kg (OECD Guideline 401)

**Inhalation:**
LC50/rat: 3.8 mg/l / 4 h
Literature data.
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.

**Dermal:**
LD50/rabbit: > 2,000 mg/kg
Literature data.

**Skin irritation:**
rabbit: Corrosive. (OECD Guideline 404)

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

**Chronic toxicity**

**Genetic toxicity:**
The substance was not mutagenic in bacteria.

**Reproductive toxicity:**
Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

**Other information:**
development of pulmonary edema

## 12. Ecological information

**Environmental fate and transport**

**Biodegradation:**

| | |
|---|---|
| Test method: | , activated sludge |
| Method of analysis: | BOD of the ThOD |
| Degree of elimination: | < 10 % (14 d) |
| Test method: | OECD Guideline 302 B, activated sludge, industrial |
| Method of analysis: | DOC reduction |
| Degree of elimination: | 44 % (28 d) |
| Evaluation: | Not readily biodegradable (by OECD criteria). |
| | Literature data. |
| | Moderately/partially eliminated from water. |
| | The product is biodegradable after extended adaptation. |

**Bioaccumulation:**

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

**Environmental toxicity**

**Acute and prolonged toxicity to fish:**
trout, rainbow/LC50 (96 h): 270 mg/l
The study was carried out in hard water. The statement of the toxic effect relates to the analytically determined concentration. Literature data.
trout, rainbow/LC50 (96 h): 28 mg/l
The study was carried out in soft water. The statement of the toxic effect relates to the analytically determined concentration. Literature data.

**Acute toxicity to aquatic invertebrates:**
Daphnia magna/EC50 (24 h): 136 mg/l
The statement of the toxic effect relates to the analytically determined concentration. Literature data.

**Toxicity to aquatic plants:**
Growth Inhibition Test green algae/EC50 (96 h): 16 mg/l
The statement of the toxic effect relates to the analytically determined concentration. Literature data.

**Toxicity to microorganisms:**
OECD Guideline 209 activated sludge, industrial/EC20 (30 min): > 1,000 mg/l
Nominal concentration.
DIN 38412 Part 8 bacterium/EC50 (16 h): 110 mg/l
After neutralization, it is no longer toxic. The details of the toxic effect relate to the nominal concentration.

**Other ecotoxicological advice:**
Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants. Do not release untreated into natural waters.

## 13. Disposal considerations

**Waste disposal of substance:**
Incinerate or dispose of in a RCRA-licensed facility.
Dispose of in a RCRA-licensed facility.
Do not discharge into waterways or sewer systems without proper authorization.

**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

## 14. Transport information

**Land transport**
USDOT

| | |
|---|---|
| Hazard class: | 8 |
| Packing group: | I |
| ID number: | UN 2734 |
| Hazard label: | 8, 3 |
| Proper shipping name: | AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (contains TERT-BUTYLAMINE) |

**Sea transport**
IMDG

| | |
|---|---|
| Hazard class: | 8 |
| Packing group: | I |
| ID number: | UN 2734 |
| Hazard label: | 8, 3 |
| Marine pollutant: | NO |
| Proper shipping name: | AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (contains TERT-BUTYLAMINE) |

**Air transport**
IATA/ICAO

| | |
|---|---|
| Hazard class: | 8 |
| Packing group: | I |

| | |
|---|---|
| ID number: | UN 2734 |
| Hazard label: | 8, 3 |
| Proper shipping name: | AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (contains TERT-BUTYLAMINE) |

## 15. Regulatory information

**Federal Regulations**

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

**OSHA hazard category:** Chronic target organ effects reported, Acute target organ effects reported, Corrosive to skin and/or eyes, Toxic - oral, Toxic - inhalation, Flammable Liquid

| CERCLA RQ | CAS Number | Chemical name |
|---|---|---|
| 100 LBS | 115-11-7; 590-18-1; 624-64-6 | 2-methylpropene; 2-Butene, (Z)-; 2-Butene, (E)- |
| 1000 LBS | 75-64-9 | tert-butylamine |

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

**State regulations**

**State RTK**

| CAS Number | Chemical name | State RTK |
|---|---|---|
| 75-64-9 | tert-butylamine | 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**

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