



Version No:4
Page 1 of 9

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4

Page 2 of 9

Section 2 - HAZARDS IDENTIFICATION



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

PRECAUTIONARY STATEMENTS

Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P234	Keep only in original container.
P240	Ground/bond container and receiving equipment.
P241	Use explosion- proof electrical/ventilating/lighting equipment
P242	Use only non- sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.

Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P304+P341	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.

Storage

P403+P235	Store in a well- ventilated place. Keep cool.
P405	Store locked up.
P406	Store in corrosive resistant container or with a resistant inner liner.

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4
Page 3 of 9

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
benzylamine	100-46-9	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Avoid giving milk or oils.
- Avoid giving alcohol.
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

SKIN

- If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

NOTES TO PHYSICIAN

- Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically.
- For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
 - Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
 - Oxygen is given as indicated.
 - The presence of shock suggests perforation and mandates an intravenous line and fluid administration.

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4
Page 4 of 9

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour forms an explosive mixture with air.
- Moderate explosion hazard when exposed to heat or flame.

Combustion products include: carbon dioxide (CO₂), nitrogen oxides (NO_x), other pyrolysis products typical of burning organic material.

May emit corrosive fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

MAJOR SPILLS

- Chemical Class: amines, aryl

For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS
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- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4
Page 5 of 9

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.

SUITABLE CONTAINER

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure. <</>.

STORAGE INCOMPATIBILITY

■ Benzylamine:

- is a strongly alkaline liquid which is incompatible with strong acids, organic anhydrides, isocyanates, aldehydes, alkylene oxides, epichlorohydrin, aldehydes, alcohols, glycols, phenols, cresols, caprolactam solution
- is violently or explosively reactive with N-chlorosuccinimide
- slowly corrodes some metals
- attacks some plastics, rubbers and coatings.
- Many arylamines (aromatic amines such as aniline, N-ethylaniline, o-toluidine, xylidine etc. and their mixtures) are hypergolic (ignite spontaneously) with red fuming nitric acid. When the amines are dissolved in triethylamine, ignition occurs at -60 deg. C. or less.
- Various metal oxides and their salts may promote ignition of amine-red fuming nitric acid systems. Soluble materials such as copper(I) oxide, ammonium metavanadate are effective; insoluble materials such as copper(II) oxide, iron(II) oxide, potassium dichromate are also effective.
- Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.
- Avoid contact with copper, aluminium and their alloys.

STORAGE REQUIREMENTS

- Store in approved flammable liquid storage area.
- No smoking, naked lights/ignition sources.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry, well-ventilated area.
- Store in an upright position.
- DO NOT store near acids, or oxidising agents.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- benzylamine:

CAS:100- 46- 9

PERSONAL PROTECTION



RESPIRATOR

Type AK Filter of sufficient capacity

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4

Page 6 of 9

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

HANDS/FEET

- Elbow length PVC gloves.
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
 - Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
- frequency and duration of contact,
 - chemical resistance of glove material,
 - glove thickness and
 - dexterity.

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

ENGINEERING CONTROLS

- Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear, colourless to yellow liquid; with strong amine-like odour mixes with water. Absorbs CO₂ from air.

PHYSICAL PROPERTIES

Liquid.
Mixes with water.
Corrosive.
Alkaline.

State	Liquid	Molecular Weight	107.16
Melting Range (°C)	- 42.8	Viscosity	1.82 cSt@40°C
Boiling Range (°C)	184- 185	Solubility in water (g/L)	Miscible
Flash Point (°C)	72 (DIN 51758)	pH (1% solution)	11.4 (100 g/l)
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°C)	405 (DIN 517940)	Vapour Pressure (kPa)	0.1
Upper Explosive Limit (%)	8.2 (108 C, 82 hPa)	Specific Gravity (water=1)	0.981
Lower Explosive Limit (%)	0.7 (57 C, 7.5 hPa)	Relative Vapour Density (air=1)	Not available
Volatile Component (%vol)	Negligible	Evaporation Rate	Not available
Material		Value	
BENZYLAMINE:			
log Kow		1.09	

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BENZYLAMINE

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

GHS Hazard Phrases

Flammable liquid and vapour.
Harmful if swallowed.
Harmful in contact with skin.
May be fatal if swallowed and enters airways.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May be corrosive to metals.
Causes severe skin burns and eye damage.
Causes serious eye damage.

TOXICITY AND IRRITATION

BENZYLAMINE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Intraperitoneal (mouse) LD50: 600 mg/kg
Oral (Rat) LD50: 563 mg/kg *
Dermal (Rat) LD50: 1350 mg/kg *

- Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.

Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic).

This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.

Inhalation-risk test (IRT): No mortality within 3 hours as shown in animal studies. Deaths possible with prolonged exposure.

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

* BASF MSDS

IRRITATION

Skin (rabbit): Corrosive
Skin : SEVERE

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4

Page 8 of 9

Section 12 - ECOLOGICAL INFORMATION

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
benzylamine	HIGH		LOW	MED

Section 13 - DISPOSAL CONSIDERATIONS

- Containers may still present a chemical hazard/ danger when empty.
 - Return to supplier for reuse/ recycling if possible.
- Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
 - Where possible retain label warnings and MSDS and observe all notices pertaining to the product.
- Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.
- A Hierarchy of Controls seems to be common - the user should investigate:
- Reduction.
 - DO NOT allow wash water from cleaning or process equipment to enter drains.
 - It may be necessary to collect all wash water for treatment before disposal.
 - In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
 - Where in doubt contact the responsible authority.
 - Recycle wherever possible.
 - Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
 - Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus
 - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: CORROSIVE

HAZCHEM: 2X

Land Transport UNDG:

Class or division:	8	Subsidiary risk:	None
UN No.:	2735	UN packing group:	II
Shipping Name:AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains benzylamine)			

Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	2735	Packing Group:	II
Special provisions:	A3		

Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. *
(CONTAINS BENZYLAMINE)

Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	2735	Packing Group:	II
EMS Number:	F- A , S- B	Special provisions:	274
Limited Quantities:	1 L		

Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. 8
(contains benzylamine)

continued...

BENZYLAMINE

GHS Safety Data Sheet

Version No:4

Page 9 of 9

Section 14 - TRANSPORTATION INFORMATION

Section 15 - REGULATORY INFORMATION

REGULATIONS

benzylamine (CAS: 100-46-9) is found on the following regulatory lists;

"OECD Representative List of High Production Volume (HPV) Chemicals"

Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by using available literature references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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