

Safety Data Sheet

BD HARDENER

Revision date: 2015/12/09

1. Identification

Product identifier used on the label

BD HARDENER

Recommended use of the chemical and restriction on use: Epoxy Hardener

* 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:

B.D. Classic Enterprises
P.O. 2445
Santa Fe Springs, CA 90670

562-944-6177

Emergency telephone number

CHEMTREC: 1-800-424-9300

Other means of identification

Chemical family: mixed amine
Synonyms: mixed amine

2. Hazards Identification

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

Classification of the product

Skin Corr./Irrit.	1C	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Aquatic Acute	2	Hazardous to the aquatic environment - acute
Aquatic Chronic	2	Hazardous to the aquatic environment - chronic

Label Elements

Pictogram:



Signal Word: Danger

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Hazard Statement:

May be corrosive to metals.
Causes serious eye damage.
Causes skin irritation.
Toxic if swallowed.
Harmful to aquatic life.
Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

Wear protective gloves and eye/face protection.
Avoid release to the environment.
Wash with plenty of water and soap thoroughly after handling.
Keep only in original container.

Precautionary Statements (Response):

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Rinse mouth.
IF ON SKIN (or hair): Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Collect spillage.

Precautionary Statements (Storage):

Store locked up.
Store in corrosive resistant/... container with a resistant innerliner.

Precautionary Statements (Disposal):

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

WARNING:

CORROSIVE LIQUID. CAUSES EYE BURNS.
CAUSES SKIN IRRITATION.
CAUSES RESPIRATORY TRACT IRRITATION.

Toxic by inhalation.

Use with local exhaust ventilation.

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

Wear protective clothing.

3. Composition / Information on Ingredients

Components

CAS Number

Concentration (Weight)

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Reaction products of di-, tri-, and tetra-propoxylatedpropane-1, 2-diol with ammonia	9046-10-0	20 - 60 %
Nonyl Phenol	84852-15-3	30 – 70 %
Proprietary Ingredients	Proprietary	< 15 %
CHEMICAL FAMILY: Mixed Cycloaliphatic Amine		

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 remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Take off contaminated clothing and shoes immediately.

If in eyes:

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

If swallowed:

Never give anything by mouth to an unconscious person. Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed:

Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Neurological disorders. Asthma. Skin disorders and Allergies. Eye disease.

Note to physician

Treatment: Application of corticosteroid cream has been effective in treating skin irritation. Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical. Dry sand. Limestone powder.

Special hazards arising from the substance or mixture

No particular hazards known.

Advice for fire-fighters

Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self-

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contained breathing apparatus for firefighting if necessary.

Further information:

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

Impact Sensitivity:

Remarks: No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.

Environmental precautions

Construct a dike to prevent spreading

Methods and material for containment and cleaning up

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

7. Handling and Storage

Handling

Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use only in well-ventilated areas. Avoid breathing vapors and/or aerosols. Use personal protective equipment. When using, do not eat, drink or smoke.

Protection against fire and explosion:

Take precautionary measures against static discharges.

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. Keep container tightly closed and in a well-ventilated place. Keep away from sources of ignition - No smoking. Keep container tightly closed.

Storage stability: Do not store in reactive metal containers. Keep container dry because product takes up the humidity of air.

8. Exposure Controls/Personal Protection

Components with workplace control parameters

Contains no substances with established exposure limit values.

Appropriate Engineering Controls

Good general ventilation (typically 10 changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to

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maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas. Ventilation should be sufficient to effectively remove, and prevent buildup of any vapors, dusts, or fumes that may be generated during handling or thermal processing.

Personal protective equipment

Respiratory protection:

Do not breathe dust/fume/gas/mist/vapors/spray. If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Butyl-rubber, nitrile rubber, neoprene, PVC disposable, or otherwise impervious gloves should be worn. Chemical resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection:

Wear face shield or tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit, long-sleeve shirts, trousers without cuffs.

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Hands and/or face should be washed before breaks and at the end of the shift. When using, do not eat, drink or smoke. Remove contaminated clothing. Discard contaminated leather articles.

9. Physical and Chemical Properties

Form:	liquid
Odor:	Amine-Like
Color:	Clear, Colorless
pH value:	Alkaline, 11-12
Melting point:	< -30 °C
Boiling point:	> 200 °C
Flash point:	> 200 °F (ASTM D93)
Flammability:	Not flammable
Lower explosion limit:	Not applicable
Upper explosion limit:	Not applicable
Autoignition:	> 200 °C
Vapor pressure:	< 1.00 mmHg at 70 °F (21 °C)
Density:	0.975 g/cm ³ at 70 °F (21 °C)
Viscosity, Dynamic	1500-2000 CPS
Solubility in Water	Not very soluble < 1%
Evaporation rate:	< Ether

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10. Stability and Reactivity

Chemical Stability:

Stable under normal conditions.

Conditions to avoid:

No data available.

Materials to avoid:

Acids, oxidizing agents

Hazardous decomposition products:

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Possibility of hazardous Reactions/Reactivity:

315 °C (DSC (DIN51007))

Thermal decomposition above the indicated temperature is possible. self-accelerating reaction

11. Toxicological

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 low toxicity after single ingestion. Of low toxicity after short-term skin contact. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard.

Oral

Type of value: LD50 Species: rat (male/female)

Value: 2,885 mg/kg (similar to OECD guideline 401) Inhalation

Type of value: LC0 Species: rat (male/female) Value: > 0.74 mg/l (IRT) Exposure time: 8 h

No mortality was observed.

Dermal

Type of value: LD50 Species: rabbit (male/female)

Value: 2,980 mg/kg (similar to OECD guideline 402)

Assessment other acute effects Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion

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

Skin

Species: rabbit Result: Corrosive.

Method: similar to OECD guideline 404

Eye

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Species: rabbit

Result: Risk of serious damage to eyes. Method: similar to OECD guideline 405

Sensitization

Assessment of sensitization: No data available. As the substance is corrosive, conducting sensitization studies is not feasible.

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organotoxicity was observed after repeated administration to animals. After repeated exposure the prominent effect is local irritation.

Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with mammalian cell culture and mammals. The substance was not mutagenic in bacteria.

Carcinogenicity

Assessment of carcinogenicity: No data available concerning carcinogenic effects.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422).

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The results were determined in a Screening test (OECD 421/422).

Other Information

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

Information on toxicological effects

Likely routes of exposure

Effects on Eye: Severe eye irritation.

Effects on Skin: If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties.

Inhalation Effects: May cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure. May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Ingestion Effects: Harmful if swallowed. May cause central nervous system effects, such as headache, nausea, vomiting, abdominal pain, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure.

Symptoms: Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause Sore throat, Neurological disorders, Asthma, Skin disorders and Allergies, Eye disease.

Acute toxicity

Acute Oral Toxicity: LD50 : 1,000 mg/kg Species : Rat.

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Inhalation:	No data is available on the product itself. Inhalation - Components Benzyl alcohol: LC50 (4 h): > 4.178 mg/l OECD Test Guideline 403 Species: Rat.
Acute Dermal Toxicity:	LD50 : > 2,800 mg/kg Species : Rabbit.
Skin corrosion/irritation:	Severe skin irritation. Corrosive to the skin of a rabbit.
Serious Eye Damage/Eye Irritation:	Severe eye irritation
Sensitization:	May cause sensitization by skin contact

Chronic Toxicity or Effects from Long Term Exposures

Carcinogenicity:	No data available
Reproductive Toxicity:	No data is available on the product itself
Germ Cell Mutagenicity:	No data is available on the product itself
Specific Target Organ Systemic Toxicity (single exposure):	No data is available
Specific Target Organ Systemic Toxicity (repeated exposure):	No data is available

This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage. Repeated or prolonged contact causes sensitization, asthma and eczemas. Neurological disorders, Asthma, Skin disorders and Allergies, Eyedisease.

Rats exposed orally to 800 mg/kg benzyl alcohol for thirteen weeks exhibited CNS depression and histopathological changes in the brain, thymus and skeletal muscles. The No Observed Adverse Effect Level (NOAEL) was 400 mg/kg. No evidence of carcinogenicity was seen in a two-year study with rats and mice.

12. Ecological Information

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) > 15 mg/l, *Oncorhynchus mykiss* (OECD Guideline 203, semistatic)

The details of the toxic effect relate to the nominal concentration. Limit concentration test only (LIMIT test).

LC50 (96 h) 772.14 mg/l, *Cyprinodon variegatus* (OECD Guideline 203, static) The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates

EC50 (48 h) 80 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static) The details of the toxic effect relate to the nominal concentration.

EC50 (48 h) 418.34 mg/l, *Arcatia tonsa* (Daphnia test acute, static) The details of the toxic effect relate to the nominal concentration.

Aquatic plants

EC50 (72 h) 15 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201, static) The details of the

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toxic effect relate to the nominal concentration.

No observed effect concentration (72 h) 0.32 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201, static)

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

EC50 (72 h) 141.72 mg/l, *Skeletonema costatum* (ISO/DIS 10253, static) The details of the toxic effect relate to the nominal concentration.

No observed effect concentration (72 h) 100 mg/l, *Skeletonema costatum* (ISO/DIS 10253, static) The details of the toxic effect relate to the nominal concentration.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms OECD Guideline 209 aerobic activated sludge of a predominantly domestic sewage/EC20 (3 h): 380 mg/l The details of the toxic effect relate to the nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H₂O) Not readily biodegradable (by OECD criteria).

Elimination information

0 % CO₂ formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic)

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis)

$t_{1/2} > 1$ a (25 °C, pH value 7), (Directive 92/69/EEC, C.7) In contact with water the substance will hydrolyse slowly.

Assessment photodegradation

After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Photodegradation

$t_{1/2}$ (Indirect photolysis) 1.6 h; OH radical

After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Bioaccumulative potential

Assessment bioaccumulation potential

No significant accumulation in organisms is expected as a result of the distribution coefficient of n- octanol/water (log Pow). The product will not be readily bioavailable due to its consistency and insolubility in water.

Mobility in soil

Assessment transport between environmental compartments Adsorption to solid soil phase is not expected.

Additional information

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

Other ecotoxicological advice:

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

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Do not release untreated into natural waters.

13. Disposal Considerations

Dispose of in a licensed facility. Do not discharge into waterways or sewer systems without proper authorization. Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Hazard class: 8
Packing group: III
ID number: UN 2735
Hazard label: 8
Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S., (Contains Polyetherdiamine)

Sea transport

IMDG

Hazard class: 8
Packing group: III
ID number: UN 2735
Hazard label: 8
Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S., (Contains Polyetherdiamine)
Marine pollutant: YES (para-nonylphenol)

Air transport

IATA/ICAO

Hazard class: 8
Packing group: III
ID number: UN 2735
Hazard label: 8
Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S., (Contains Polyetherdiamine)
Marine pollutant: YES (para-nonylphenol)

15. Regulatory Information

Registration status:

Toxic Substance Control Act (TSCA) 12(b)
Chemical TSCA, US released /listed

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EPCRA 311/312 (Hazard categories): Acute;

NFPA Hazard codes:

Health : 3 Fire: 1 Reactivity: 0 Special:

HMIS III rating

Health: 3 Flammability: 1 Physical hazard:0

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

Aquatic Acute	2	Hazardous to the aquatic environment - acute
Aquatic Chronic	2	Hazardous to the aquatic environment - chronic
Skin Corr./Irrit.	1	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation

16. Other Information

HMIS Rating

Health : 3
Flammability : 1
Physical hazard : 0

SDS Prepared by:

B.D. Classic Enterprises

The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication as part of B. D. Classic Enterprises, Inc. Product Safety Program. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information obtained herein. Data sheets are available for all B. D. Classic products. You are urged to obtain data sheets for all B. D. Classic products you buy, process, use or distribute and you are encouraged and requested to advise those who may come in contact with such products of the information contained therein.

To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency. B. D. Classic does not undertake to furnish advice on such matters.