

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

1 Identification

- **Product identifier**
- **Trade name:** *BD54420 Part B (Hardener)*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Big Dog Adhesives LLC
435 Harrison Street
ELKHART, IN 46516
USA
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal opening times: +1 (520) 271-7313
24 Hours: CHEMTREC 1-800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Reproductive toxicity 2 H361 Suspected of damaging fertility or the unborn child.



GHS05 Corrosion

Skin corrosion 1A H314 Causes severe skin burns and eye damage.
Eye damage 1 H318 Causes serious eye damage.



GHS07

Sensitization - skin 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05



GHS07



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**
3,3'-Oxybis(ethyleneoxy)bis(propylamine)
4-nonylphenol, Branched
2-piperazin-1-ylethylamine

(Contd. on page 2)

US

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: BD54420 Part B (Hardener)

(Contd. of page 1)

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)

2,2'-iminodiethylamine

· **Hazard statements**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

If inhaled: Remove person to fresh air and keep comfortable for breathing.

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/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 1

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3

Fire = 1

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Classification according to (d)(1)(ii) of § 1910.12000**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

-US-

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: **BD54420 Part B (Hardener)**

(Contd. of page 2)

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

4246-51-9	3,3'-Oxybis(ethyleneoxy)bis(propylamine)	15–40% *
140-31-8	2-piperazin-1-ylethylamine	10–30% *
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)	10–30% *
84852-15-3	4-nonylphenol, Branched	7–13% *
31326-29-1	Bisphenol A-epichlorohydrin-diethylenetriamine copolymer	\geq 5– \leq 7% *
111-40-0	2,2'-iminodiethylamine	\geq 1–<5% *

* Actual concentration ranges are withheld as a trade secret.

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: **BD54420 Part B (Hardener)**

(Contd. of page 3)

Ensure adequate ventilation.

· **Protective Action Criteria for Chemicals**

· PAC-1:		
4246-51-9	3,3'-Oxybis(ethyleneoxy)bis(propylamine)	13 mg/m ³
140-31-8	2-piperazin-1-ylethylamine	6.4 mg/m ³
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	90 mg/m ³
84852-15-3	4-nonylphenol, Branched	3.9 mg/m ³
111-40-0	2,2'-iminodiethylamine	3 ppm
· PAC-2:		
4246-51-9	3,3'-Oxybis(ethyleneoxy)bis(propylamine)	140 mg/m ³
140-31-8	2-piperazin-1-ylethylamine	71 mg/m ³
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	990 mg/m ³
84852-15-3	4-nonylphenol, Branched	4.8 ppm
111-40-0	2,2'-iminodiethylamine	42 mg/m ³
· PAC-3:		
4246-51-9	3,3'-Oxybis(ethyleneoxy)bis(propylamine)	850 mg/m ³
140-31-8	2-piperazin-1-ylethylamine	420 mg/m ³
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	5,900 mg/m ³
84852-15-3	4-nonylphenol, Branched	29 ppm
111-40-0	2,2'-iminodiethylamine	210 mg/m ³

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· **Information about protection against explosions and fires:** Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

· **Specific end use(s)** No further relevant information available.

US

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: **BD54420 Part B (Hardener)**

(Contd. of page 4)

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

111-40-0 2,2'-iminodiethylamine

REL	Long-term value: 4 mg/m ³ , 1 ppm Skin
TLV	Long-term value: 1 ppm Skin

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Appropriate engineering controls** No further data; see section 7.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

US

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: BD54420 Part B (Hardener)

(Contd. of page 5)

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Physical state	Fluid
· Color:	According to product specification
· Odor:	Characteristic
· Odor threshold:	Not determined.
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	220.4 °C (428.7 °F)
· Flammability:	Not applicable.
· Explosion limits:	
· Lower:	2.1 Vol %
· Upper:	10.5 Vol %
· Flash point:	101 °C (213.8 °F)
· Auto igniting:	260 °C (500 °F)
· Decomposition temperature:	Not determined.
· pH-value:	Not determined.
· Viscosity:	
· Kinematic:	Not determined.
· Dynamic:	Not determined.
· Solubility in / Miscibility with	
· Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Vapor pressure at 20 °C (68 °F):	0.1 hPa
· Vapor pressure:	
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Particle characteristics	Not applicable.

· Other information

· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Solvent content:	
· VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
· Solids content:	<69.9 %
· Change in condition	
· Evaporation rate	Not determined.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: **BD54420 Part B (Hardener)**

(Contd. of page 6)

· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**· **Acute toxicity:**· **LD/LC50 values that are relevant for classification:****ATE (Acute Toxicity Estimate)**

Oral LD50 2,701–<2,795 mg/kg

Dermal LD50 >3,437–3,619 mg/kg (rabbit)

4246-51-9 3,3'-Oxybis(ethyleneoxy)bis(propylamine)

Oral LD50 4,310 mg/kg (rat)

Dermal LD50 2,510 mg/kg (rabbit)

140-31-8 2-piperazin-1-ylethylamine

Oral LD50 2,140 mg/kg (rat)

Dermal LD50 880 mg/kg (rabbit)

31326-29-1 Bisphenol A-epichlorohydrin-diethylenetriamine copolymer

Oral LD50 1,620 mg/kg (rat)

Dermal LD50 1,090 mg/kg (rabbit)

111-40-0 2,2'-iminodiethylamine

Oral LD50 1,080 mg/kg (rat)

Dermal LD50 1,090 mg/kg (rabbit)

· **Primary irritant effect:**· **on the skin:** Strong caustic effect on skin and mucous membranes.· **on the eye:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

· **Sensitization:** Sensitization possible through skin contact.· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Interactive effects** No interactive effects between components are known.· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

US

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: **BD54420 Part B (Hardener)**

(Contd. of page 7)


12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even extremely small quantities leak into the ground.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- | | |
|--|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA | <p style="text-align: center;">UNI760</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · IMDG · IATA | <p><i>Corrosive liquids, n.o.s. (3,3'-Oxybis(ethyleneoxy) bis(propylamine), N-Aminoethylpiperazine)</i></p> <p><i>CORROSIVE LIQUID, N.O.S. (3,3'-Oxybis(ethyleneoxy) bis(propylamine), N-AMINOETHYLPIPERAZINE)</i></p> <p><i>Corrosive liquid, n.o.s. (3,3'-Oxybis(ethyleneoxy) bis(propylamine), N-AMINOETHYLPIPERAZINE)</i></p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | |
| <div style="text-align: center;">  <p>8</p> </div> <ul style="list-style-type: none"> · Class | <p style="text-align: center;">8 Corrosive substances</p> |

(Contd. on page 9)

Safety Data Sheet


acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: **BD54420 Part B (Hardener)**

(Contd. of page 8)

· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	Product contains environmentally hazardous substances: 4-nonylphenol, Branched
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Special precautions for user	Warning: Corrosive substances
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG18) Alkalis
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· UN "Model Regulation":	UN 1760 CORROSIVE LIQUID, N.O.S. (3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE), N-AMINOETHYLPIPERAZINE), 8, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

84852-15-3 4-nonylphenol, Branched

· **TSCA (Toxic Substances Control Act):**

4246-51-9 3,3'-Oxybis(ethyleneoxy)bis(propylamine)

ACTIVE

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: BD54420 Part B (Hardener)

(Contd. of page 9)

140-31-8	2-piperazin-1-ylethylamine	ACTIVE
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)	ACTIVE
84852-15-3	4-nonylphenol, Branched	ACTIVE
111-40-0	2,2'-iminodiethylamine	ACTIVE

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

3,3'-Oxybis(ethyleneoxy)bis(propylamine)

4-nonylphenol, Branched

2-piperazin-1-ylethylamine

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)

2,2'-iminodiethylamine

· **Hazard statements**

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts or mists.

Wash thoroughly after handling.

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Date of issue: 12/11/2024

Reviewed on 12/11/2024

Trade name: BD54420 Part B (Hardener)

(Contd. of page 10)

Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 If swallowed: Rinse mouth. Do NOT induce vomiting.
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 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/doctor.
 IF exposed or concerned: Get medical advice/attention.
 Specific treatment (see on this label).
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.

· **Contact:** -

· **Date of preparation** 12/11/2024

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin corrosion 1A: Skin corrosion/irritation – Category 1A

Eye damage 1: Serious eye damage/eye irritation – Category 1

Sensitization - skin 1: Skin sensitisation – Category 1

Reproductive toxicity 2: Reproductive toxicity – Category 2