

EPIBOND® 1565 A US

Version 1.0 Revision Date: 03/06/2019 SDS Number: 400001012740 Date of last issue: -
Date of first issue: 03/06/2019

SECTION 1. IDENTIFICATION

Product name : EPIBOND® 1565 A US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC
Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)
Telephone : Non-Emergency: (800) 257-5547
E-mail address of person responsible for the SDS : SDS@huntsman.com
Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Adhesives and/or sealants
Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Skin irritation : Category 2
Serious eye damage : Category 1
Skin sensitisation : Category 1
Germ cell mutagenicity : Category 2
Carcinogenicity : Category 2
Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Reproductive organs, Gastrointestinal tract, Stomach)
Short-term (acute) aquatic hazard : Category 2
Long-term (chronic) aquatic hazard : Category 2

GHS label elements

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Hazard pictograms



Signal word

: Danger

Hazard statements

: H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H341 Suspected of causing genetic defects.
 H351 Suspected of causing cancer.
 H373 May cause damage to organs (Reproductive organs, Gastrointestinal tract, Stomach) through prolonged or repeated exposure if swallowed.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin thoroughly after handling.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P305 + P351 + P338 + P310 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.
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.
 P391 Collect spillage.
Storage:
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

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Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Epoxyphenol Novolac Resin	28064-14-4	70 - 90
1,4-bis(2,3-epoxypropoxy)butane	2425-79-8	10 - 20
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	2.5 - 5
Glass, oxide, chemicals	65997-17-3	1 - 5
2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane	3388-04-3	0.25 - 1

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.
 Treat symptomatically.
 Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.
 Get medical attention if symptoms occur.
- In case of skin contact : If skin irritation persists, call a physician.
 If on skin, rinse well with water.
 If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
 In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Continue rinsing eyes during transport to hospital.
 Remove contact lenses.
 Keep eye wide open while rinsing.
 If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
 Do NOT induce vomiting.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
 Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

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- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon dioxide (CO₂)
Carbon monoxide
Nitrogen oxides (NO_x)
- Specific extinguishing methods : No data is available on the product itself.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma,

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allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.
- Materials to avoid : For incompatible materials please refer to Section 10 of this SDS.
- Recommended storage temperature : 36 - 46 °F / 2 - 8 °C
- Further information on storage stability : Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

Personal protective equipment

- Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
- Hand protection
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.
- Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: translucent
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: No data is available on the product itself.
Freezing point	: No data is available on the product itself.
Melting point	: No data is available on the product itself.
Boiling point	: No data is available on the product itself.
Flash point	: > 279 °F / > 137 °C Method: closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Flammability (liquids)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: < 1.333 hPa (68 °F / 20 °C)
Relative vapour density	: 1
Relative density	: 1.28
Density	: No data is available on the product itself.
Solubility(ies)	
Water solubility	: slightly soluble
Solubility in other solvents	: No data is available on the product itself.
Partition coefficient: n-octanol/water	: No data is available on the product itself.
Auto-ignition temperature	: No data is available on the product itself.
Thermal decomposition	: No data is available on the product itself.
Self-Accelerating	: No data is available on the product itself.

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decomposition temperature
(SADT)

Viscosity

Viscosity, dynamic : 36,000 - 46,000 mPa.s

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

Particle size : No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No hazards to be specially mentioned.

Conditions to avoid : None known.

Incompatible materials : None known.

Hazardous decomposition products : carbon dioxide
carbon monoxide
Nitrogen oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 11.23 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

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Skin corrosion/irritation**Components:**

Epoxyphenol Novolac Resin:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Skin irritation

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Glass, oxide, chemicals:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: Normally reversible injuries

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation**Components:**

Epoxyphenol Novolac Resin:

Species: Rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rabbit

Result: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Species: Rabbit

Result: slight irritation

Method: Other guidelines

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

Respiratory or skin sensitisation**Components:**

Epoxyphenol Novolac Resin:

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Exposure routes: Skin
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitisation by skin contact.

1,4-bis(2,3-epoxypropoxy)butane:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:
Exposure routes: Skin
Species: Guinea pig
Result: The product is a skin sensitiser, sub-category 1B.

Glass, oxide, chemicals:
Exposure routes: Skin
Species: Other
Result: Does not cause skin sensitisation.

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:
Test Type: Maximisation Test
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: The product is a skin sensitiser, sub-category 1B.

Assessment: No data available

Germ cell mutagenicity**Components:**

Epoxyphenol Novolac Resin:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: positive

Concentration: 0 - 5000 ug/plate
Metabolic activation: with and without metabolic activation
Result: positive

1,4-bis(2,3-epoxypropoxy)butane:

Genotoxicity in vitro : Concentration: 10 - 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive
Remarks: Not classified due to data which are conclusive although insufficient for classification.

Concentration: 1 - 100 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive
Remarks: Not classified due to data which are conclusive although insufficient for classification.

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p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 480
Result: positive

Metabolic activation: negative
Method: OECD Test Guideline 471
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Components:

Epoxyphenol Novolac Resin:

Genotoxicity in vivo : Cell type: Germ
Application Route: Oral
Result: negative

Cell type: Somatic
Application Route: Oral
Dose: 0 - 5000 mg/kg
Result: negative

1,4-bis(2,3-epoxypropoxy)butane:

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Somatic
Application Route: Oral
Exposure time: 4 d
Dose: 187.5 - 750 mg/kg
Method: OECD Test Guideline 474
Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat
Cell type: Liver cells
Application Route: Oral
Method: OECD Test Guideline 486
Result: negative

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

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Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male)
Application Route: Oral
Dose: 438, 875, 1750mg/kg bw
Method: OECD Test Guideline 474
Result: negative

Components:

1,4-bis(2,3-epoxypropoxy)butane:

Germ cell mutagenicity- : Weight of evidence does not support classification as a germ
Assessment cell mutagen.

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Germ cell mutagenicity- : In vitro tests showed mutagenic effects
Assessment

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Germ cell mutagenicity- : In vitro tests showed mutagenic effects
Assessment

Germ cell mutagenicity- : No data available
Assessment

Carcinogenicity**Components:**

Epoxyphenol Novolac Resin:

Species: Rat, male and female

Application Route: Oral

Exposure time: 24 month(s)

Dose: 15 mg/kg

Frequency of Treatment: 7 daily

Method: OECD Test Guideline 453

Result: negative

Species: Mouse, male

Application Route: Dermal

Exposure time: 24 month(s)

Dose: .1 mg/kg

Frequency of Treatment: 3 daily

Method: OECD Test Guideline 453

Result: negative

Species: Rat, female

Application Route: Dermal

Exposure time: 24 month(s)

Dose: 1 mg/kg

Frequency of Treatment: 5 daily

Method: OECD Test Guideline 453

Result: negative

Components:

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

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Carcinogenicity - Assessment
IARC : Limited evidence of carcinogenicity in animal studies
 Group 2A: Probably carcinogenic to humans
 Glass, oxide, chemicals (glass)

ACGIH Confirmed animal carcinogen with unknown relevance to humans
 Solvent naphtha (petroleum), light arom.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Components:**Epoxyphenol Novolac Resin:
Effects on fertility

: Species: Rat, male and female
 Application Route: Oral
 Method: OECD Test Guideline 416
 Result: No effects on fertility and early embryonic development were detected.

Components:Epoxyphenol Novolac Resin:
Effects on foetal development

: Species: Rabbit, female
 Application Route: Dermal
 General Toxicity Maternal: No observed adverse effect level: 30 mg/kg body weight
 Result: No teratogenic effects

Species: Rabbit, female
 Application Route: Oral
 General Toxicity Maternal: No observed adverse effect level: 60 mg/kg body weight
 Method: OECD Test Guideline 414
 Result: No teratogenic effects

Species: Rat, female
 Application Route: Oral
 General Toxicity Maternal: No observed adverse effect level: 180 mg/kg body weight
 Method: OECD Test Guideline 414
 Result: No teratogenic effects

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Species: Rat
 Application Route: Oral
 Dose: 0.25, 1, 2.5 ml/kg
 General Toxicity Maternal: No-observed-effect level: ≥ 0.25

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ml/kg

Embryo-foetal toxicity: No observed adverse effect level: >=

25 ml/kg

Method: OECD Test Guideline 414

Reproductive toxicity - : No data available
Assessment

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity**Components:**

Epoxyphenol Novolac Resin:

Species: Rat, male and female

NOAEL: 50 mg/kg

Application Route: Ingestion

Exposure time: 14 Weeks

Number of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

NOEL: 10 mg/kg

Application Route: Skin contact

Exposure time: 13 Weeks

Number of exposures: 5 d

Method: Subchronic toxicity

Species: Mouse, male

NOAEL: 100 mg/kg

Application Route: Skin contact

Exposure time: 13 Weeks

Number of exposures: 3 d

Method: Subchronic toxicity

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rat, male and female

NOAEL: 200 mg/kg

Application Route: Ingestion

Exposure time: 28 d

Number of exposures: 7 d

Method: Subacute toxicity

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Species: Rat, male and female

NOAEL: 50 mg/kg bw/day

Application Route: Oral

Exposure time: 28 d

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Number of exposures: Once daily
Dose: 0, 50, 150, 450 mg/kg bw/day
Target Organs: Gastrointestinal tract, Stomach, female reproductive organs
Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Glass, oxide, chemicals:
Species: Rat, male
LOEC: 2.4 mg/m³
Test atmosphere: dust/mist
Exposure time: 2,160 h
Number of exposures: 6 h
Method: Directive 67/548/EEC, Annex, B.29

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:
Species: Rat, male and female
NOAEL: 1,000 mg/kg
Application Route: Oral
Exposure time: 90 d
Dose: 0, 100, 500, 1000 mg/kg
Method: OECD Test Guideline 408

Repeated dose toxicity - : No data available
Assessment

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

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Ingestion: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:**

Epoxyphenol Novolac Resin:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.5 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 24 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 4.2 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Glass, oxide, chemicals:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
Exposure time: 96 h
Test Type: Other guidelines
Test substance: Fresh water
Method: OECD Test Guideline 203

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 180 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Components:

Epoxyphenol Novolac Resin:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.7 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

EC50 (Daphnia magna (Water flea)): 2.7 mg/l
Exposure time: 48 h

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Test Type: static test
Test substance: Fresh water

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 75 mg/l
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 18 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Glass, oxide, chemicals:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 20 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Components:**Epoxyphenol Novolac Resin:**

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to algae/aquatic plants : EL50: > 160 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): 13 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Glass, oxide, chemicals:

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
Exposure time: 72 h

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Test Type: semi-static test
Method: OECD Test Guideline 201

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 17 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : No data available

Components:

Epoxyphenol Novolac Resin:

Toxicity to fish (Chronic toxicity) : GLP: yes

Components:

Epoxyphenol Novolac Resin:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.3 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.42 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : No data available

Components:

Epoxyphenol Novolac Resin:

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

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Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment

Components:

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability**Components:**

Epoxyphenol Novolac Resin:

Biodegradability : Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

1,4-bis(2,3-epoxypropoxy)butane:

Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 43 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Biodegradability : Inoculum: activated sludge
Concentration: 3.2 mg/l
Result: Not readily biodegradable.
Biodegradation: 3.4 %
Exposure time: 29 d
Method: OECD Test Guideline 301B

2-(3,4-epoxycyclohexyl)ethyltrimethoxysilane:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 2 mg/l
Result: Not biodegradable
Biodegradation: 28 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Biochemical Oxygen Demand (BOD) : No data available

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Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Components:

Epoxyphenol Novolac Resin:

Stability in water : Degradation half life(DT50): 4.83 d (77 °F / 25 °C) pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life(DT50): 7.1 d (77 °F / 25 °C) pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life(DT50): 3.58 d (77 °F / 25 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:

Stability in water : Degradation half life(DT50): 4.3 hrs (122 °F / 50 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life(DT50): 4.1 d (68 °F / 20 °C) pH: 7
Method: OECD Test Guideline 111

Degradation half life(DT50): 3.9 hrs (122 °F / 50 °C) pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life(DT50): 10 h (104 °F / 40 °C) pH: 7
Method: OECD Test Guideline 111

Degradation half life(DT50): 2.2 d (77 °F / 25 °C) pH: 4
Method: OECD Test Guideline 111
GLP: No information available.
Remarks: Fresh water

Degradation half life(DT50): 4.3 h (122 °F / 50 °C) pH: 7
Method: OECD Test Guideline 111

Degradation half life(DT50): 2.3 d (77 °F / 25 °C) pH: 7
Method: OECD Test Guideline 111

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Remarks: Fresh water

Degradation half life(DT50): 2.6 d (77 °F / 25 °C) pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life(DT50): 5.7 hrs (122 °F / 50 °C) pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential**Components:**

Epoxyphenol Novolac Resin:
Bioaccumulation : Bioconcentration factor (BCF): 31
Remarks: Does not bioaccumulate.

Components:

Epoxyphenol Novolac Resin:
Partition coefficient: n-octanol/water : log Pow: 3.242 (77 °F / 25 °C)
pH: 7.1
Method: OECD Test Guideline 117

1,4-bis(2,3-epoxypropoxy)butane:
Partition coefficient: n-octanol/water : log Pow: -0.269 (77 °F / 25 °C)
pH: 6.7
Method: OECD Test Guideline 117

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:
Partition coefficient: n-octanol/water : log Pow: 0.871 (77 °F / 25 °C)
pH: 7

Mobility in soil

Mobility : No data available

Components:

Epoxyphenol Novolac Resin:
Distribution among environmental compartments : Koc: 445
1,4-bis(2,3-epoxypropoxy)butane:
Distribution among environmental compartments : Koc: 12.59
Method: OECD Test Guideline 121

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline:
Distribution among environmental compartments : Koc: 84
Method: OECD Test Guideline 121

Stability in soil : No data available

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Other adverse effects

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of contents/ container to an approved waste disposal plant.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulations**

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IATA

UN/ID No. : UN 3082
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
 (EPOXY PHENOL NOVOLAC RESIN, TRIGLYCIDYL-P-AMINOPHENOL)
 Class : 9
 Packing group : III
 Labels : Miscellaneous
 Packing instruction (cargo aircraft) : 964
 Packing instruction (passenger aircraft) : 964
 Environmentally hazardous : yes

IMDG

UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 (EPOXY PHENOL NOVOLAC RESIN, TRIGLYCIDYL-P-AMINOPHENOL)
 Class : 9
 Packing group : III
 Labels : 9
 EmS Code : F-A, S-F
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**DOT Classification**

UN/ID/NA number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 (EPOXY PHENOL NOVOLAC RESIN, TRIGLYCIDYL-P-AMINOPHENOL)
 Class : 9
 Packing group : III
 Labels : CLASS 9
 ERG Code : 171
 Marine pollutant : yes(EPOXY PHENOL NOVOLAC RESIN, TRIGLYCIDYL-P-AMINOPHENOL)

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act**

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitisation
 Germ cell mutagenicity
 Carcinogenicity
 Specific target organ toxicity (single or repeated exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

WARNING: This product can expose you to chemicals including cumene, which is/are known to the State of California to cause cancer, and methanol, toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

CH INV : The formulation contains substances listed on the Swiss Inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : Not in compliance with the inventory

TSCA : On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

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No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

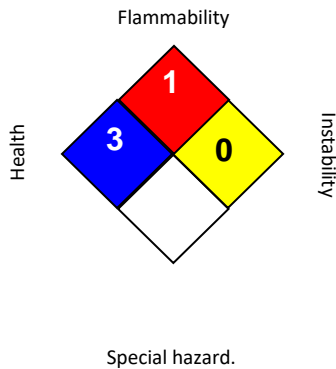
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline 5026-74-4

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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