

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Printing date: 17/02/2014

Revision: 17/02/2014

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Epoxy Hardener (4:1 Fast Cure) HC

· **Application of the substance / the preparation** Epoxy curing agent

1.3 Details of the supplier of the Safety Data Sheet

· Supplier:

U.S. Composites, Inc.
6670 White Drive
West Palm Beach, FL 33407 USA
Phone: (561)842-6121



· **Further information obtainable from:** Product Safety Department

· 1.4 Emergency telephone number:

ChemTel Inc.
(800)255-3924, +1 (813)248-0585

2 Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008



GHS08 health hazard

Repr. 2; H361f: Suspected of damaging fertility.



GHS05 corrosion

Skin Corr. 1B; H314: Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4; H302: Harmful if swallowed.

Acute Tox. 4; H312: Harmful in contact with skin.

Acute Tox. 4; H332: Harmful if inhaled.

Skin Sens. 1; H317: May cause an allergic skin reaction.

STOT SE 3; H335: May cause respiratory irritation.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC



C; Corrosive

R34: Causes burns.



Xn; Harmful

R22-62: Harmful if swallowed. Possible risk of impaired fertility.



Xi; Irritant

R37: Irritating to respiratory system.

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 Xi; Sensitising

R43: May cause sensitisation by skin contact.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** Danger

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

Formaldehyde, reaction products with bisphenol A and diethylene triamine.

Benzyl alcohol

2,2'-iminodiethylamine

bisphenol A

· **Hazard statements**

H302+H312+H332: Harmful if swallowed, in contact with skin or if inhaled

H314: Causes severe skin burns and eye damage.

H317: May cause an allergic skin reaction.

H361f: Suspected of damaging fertility.

H335: May cause respiratory irritation.

Contains epoxy constituents. May produce an allergic reaction.

Contains bisphenol A, 2,2'-iminodiethylamine, Formaldehyde, reaction products with bisphenol A and diethylene triamine.. May produce an allergic reaction.

· **Precautionary statements**

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P281: Use personal protective equipment as required.

P264: Wash thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P272: Contaminated work clothing should not be allowed out of the workplace.

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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- 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.
- P321: Specific treatment (see on this label).
- P322: Specific measures (see on this label).
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P363: Wash contaminated clothing before reuse.
- P308+P313: IF exposed or concerned: Get medical advice/attention.
- P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
- P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P330: Rinse mouth.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P405: Store locked up.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Hazard description:**

- **WHMIS-symbols:**

- D2A - Very toxic material causing other toxic effects
- D2B - Toxic material causing other toxic effects
- E - Corrosive material



- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **3.2 Mixtures**

- **Description:** Mixture of substances listed below with nonhazardous additions.

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· **Dangerous components:**

CAS: 72361-54-7	Formaldehyde, reaction products with bisphenol A and diethylene triamine. ☒ Xi R36/37/38; ☒ Xi R43 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	> 50%
CAS: 100-51-6 EINECS: 202-859-9 Index number: 603-057-00-5	Benzyl alcohol ☒ Xn R20/22 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	5.0-20%
CAS: 80-05-7 EINECS: 201-245-8 Index number: 604-030-00-0	bisphenol A ☒ Xn R62; ☒ Xi R37-41; ☒ Xi R43 R52 Repr. Cat. 3 ⚠ Repr. 2, H361f ⚠ Eye Dam. 1, H318 ⚠ Skin Sens. 1, H317; STOT SE 3, H335	5.0-20%
CAS: 111-40-0 EINECS: 203-865-4 Index number: 612-058-00-X	2,2'-iminodiethylamine ☒ C R34; ☒ Xn R21/22; ☒ Xi R43 ⚠ Skin Corr. 1B, H314 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317	5.0-20%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **4.1 Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air; consult doctor in case of complaints.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Do not induce vomiting; call for medical help immediately.

Rinse out mouth and then drink plenty of water.

A person vomiting while laying on their back should be turned onto their side.

· **4.2 Most important symptoms and effects, both acute and delayed**

Allergic reactions

Gastric or intestinal disorders

Breathing difficulty

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- **Hazards** Danger of impaired breathing.
- **4.3 Indication of any immediate medical attention and special treatment needed**
Medical supervision for at least 48 hours.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
- **6.4 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

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.

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

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **8.1 Control parameters**

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

100-51-6 Benzyl alcohol

WEEL (USA) 10 ppm

111-40-0 2,2'-iminodiethylamine

REL (USA) 4 mg/m³, 1 ppm

Skin

TLV (USA) 4,2 mg/m³, 1 ppm

Skin

EL (Canada) 1 ppm

Skin; S

EV (Canada) 4 mg/m³, 1 ppm

Skin

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **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. Avoid contact with the eyes and skin.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **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 cannot 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.

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· Eye protection:



Safety glasses

· Body protection: Protective work clothing

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Colour:	Light brown
· Odour:	Amine-like
· Odour threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	205°C (401 °F)

· Flash point: 96°C (203 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 325°C (617 °F)

· Decomposition temperature: Not determined.

· Self-igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapour pressure at 20°C: < 1,0 hPa (< 1.0 mm Hg) (Estimated))

· Density at 20°C:	1,0 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with water: Fully miscible.

· Segregation coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic: Not determined.

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Kinematic: 9.2 Other information	Not determined. No further relevant information available.
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10 Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
 No decomposition if used according to specifications.
 To avoid thermal decomposition do not overheat.
- **10.3 Possibility of hazardous reactions**
 Reacts with strong oxidizing agents.
 Reacts with peroxides and other radical forming substances.
 Reacts with alkalis releasing formaldehyde.
 Danger of polymerization.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
 Nitrogen oxides (NO_x)
 Small quantities of formaldehyde may be formed
 Ammonia
 Carbon monoxide and carbon dioxide

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

100-51-6 Benzyl alcohol

Oral	LD50	1230 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)

80-05-7 bisphenol A

Oral	LD50	3250 mg/kg (rat)
Dermal	LD50	3000 mg/kg (rabbit)

111-40-0 2,2'-iminodiethylamine

Oral	LD50	1080 mg/kg (rat)
Dermal	LD50	1090 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:**
 Strong irritant with the danger of severe eye injury.
 Strong caustic effect.

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- **Sensitization:**

Sensitization possible through skin contact.

Sensitizing effect through inhalation is possible by prolonged exposure.

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Corrosive

Irritant

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

12 Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **12.2 Persistence and degradability**

Hints concerning the decomposition process are available.

The product is partly biodegradable. Significant residuals remain.

- **12.3 Bioaccumulative potential** May be accumulated in organism

- **12.4 Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

The product contains materials that are harmful to the environment.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Can be disposed of with household garbage after solidification following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

- **Uncleaned packaging:**

- **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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14 Transport information

· 14.1 UN-Number · DOT, ADR, IMDG, IATA	UN2735
· 14.2 UN proper shipping name · DOT, IMDG, IATA · ADR	Amines, Liquid, Corrosive, N.O.S. (Diethylenetriamine) 2735 Amines, Liquid, Corrosive, N.O.S. (Diethylenetriamine)
· 14.3 Transport hazard class(es) · DOT	
	
· Class · Label	8 Corrosive substances. 8
· ADR	
	
· Class · Label	8 (C7) Corrosive substances. 8
· IMDG, IATA	
	
· Class · Label	8 Corrosive substances. 8
· 14.4 Packing group · DOT, ADR, IMDG, IATA	III
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups	Warning: Corrosive substances. 80 F-A, S-B Alkalis

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- | | |
|---|--|
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · ADR | |
| · Tunnel restriction code | E |
| · UN "Model Regulation": | UN2735, Amines, Liquid, Corrosive, N.O.S. (Diethylenetriamine), 8, III |

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· Section 355 (extremely hazardous substances):	
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50-00-0	formaldehyde
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· Section 313 (Specific toxic chemical listings):	
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80-05-7	bisphenol A
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50-00-0	formaldehyde
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· TSCA (Toxic Substances Control Act):	
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All ingredients are listed.	
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· Proposition 65 (California):	
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· Chemicals known to cause cancer:	
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50-00-0	formaldehyde
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· Chemicals known to cause reproductive toxicity for females:	
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None of the ingredients is listed.	
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· Chemicals known to cause reproductive toxicity for males:	
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None of the ingredients is listed.	
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· Chemicals known to cause developmental toxicity:	
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None of the ingredients is listed.	
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· Carcinogenic Categories	
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· EPA (Environmental Protection Agency)	
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None of the ingredients is listed.	
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· TLV (Threshold Limit Value established by ACGIH)	
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None of the ingredients is listed.	
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· NIOSH-Ca (National Institute for Occupational Safety and Health)	
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None of the ingredients is listed.	
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- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Canada**

- **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

111-40-0 2,2'-iminodiethylamine

50-00-0 formaldehyde

- **Canadian Ingredient Disclosure list (limit 1%)**

100-51-6 Benzyl alcohol

80-05-7 bisphenol A

- **15.2 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.

- **Relevant phrases**

H302: Harmful if swallowed.

H312: Harmful in contact with skin.

H314: Causes severe skin burns and eye damage.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

H335: May cause respiratory irritation.

H361f: Suspected of damaging fertility.

R20/22: Harmful by inhalation and if swallowed.

R21/22: Harmful in contact with skin and if swallowed.

R34: Causes burns.

R36/37/38: Irritating to eyes, respiratory system and skin.

R37: Irritating to respiratory system.

R41: Risk of serious damage to eyes.

R43: May cause sensitisation by skin contact.

R52: Harmful to aquatic organisms.

R62: Possible risk of impaired fertility.

- **Abbreviations and Acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

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HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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