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

Printing date: 08/03/2016 **Revision: 08/03/2016**

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

· **1.1 Product identifier**
· **Trade name: Epoxy Hardener (3:1 Medium Cure)**
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the preparation** Product Component

· **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

US COMPOSITES
PERFORMANCE PRODUCTS DELIVERED

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

· **1.4 Emergency telephone number:**

: Chemtrec: (800) 424-9300 or (703) 527-3887

2 Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS08 health hazard

Muta. 2; H341: Suspected of causing genetic defects.


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.

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


C; Corrosive

R34: Causes burns.


Xn; Harmful

R20/21/22-68/20/21/22: Harmful by inhalation, in contact with skin and if swallowed. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

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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.
The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

· **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, oligomeric reaction products with phenol and triethylenetetramine
3,6-diazaoctanethylenediamin
phenol

· **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.
H341: Suspected of causing genetic defects.
Contains Formaldehyde, oligom eric reaction products with phenol and triethylenetetram ine, 3,6-diazaoctanethylenediamin. May produce an allergic reaction.

· **Precautionary statements**
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P281: Use personal protective equipment as required.
P264: Wash thoroughly after handling.
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.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.

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P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

· **Hazard description:**

· **WHMIS-symbols:**

D2B - Toxic material causing other toxic effects

E - Corrosive material

· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *3
Fire = 1
Reactivity = 0

* - Indicates a long term health hazard from repeated or prolonged exposures.

· **HMIS Long Term Health Hazard Substances**	
108-95-2	phenol

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

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

· **Dangerous components:**		
CAS: 32610-77-8 NLP: 500-083-8	Formaldehyde, oligomeric reaction products with phenol and triethylenetetramine Xi R36; Xi R43 Eye Irrit. 2, H319; Skin Sens. 1B, H317	85-95%

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CAS: 112-24-3 EINECS: 203-950-6 Index number: 612-059-00-5	3,6-diazaoctanethylenediamin C R34; Xn R21; Xi R43 R52/53 Skin Corr. 1B, H314 Acute Tox. 4, H312; Skin Sens. 1, H317 Aquatic Chronic 3, H412	5-10%
CAS: 108-95-2 EINECS: 203-632-7 Index number: 604-001-00-2	phenol T R23/24/25; C R34; Xn R48/20/21/22-68 Muta. Cat. 3 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 Muta. 2, H341; STOT RE 2, H373 Skin Corr. 1B, H314	2-5%

· **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:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air.
Seek immediate medical advice.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
· **After eye contact:**
Rinse opened eye for several minutes under running water.
Remove contact lenses if worn, if possible.
Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
· **4.2 Most important symptoms and effects, both acute and delayed**
Coughing
Breathing difficulty
Dizziness
Cramp
· **Hazards**
Danger of impaired breathing.
Danger of gastric perforation.
Danger of cerebral oedema.
Condition may deteriorate with alcohol consumption.
· **4.3 Indication of any immediate medical attention and special treatment needed**
If swallowed, gastric irrigation with added, activated carbon.

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Monitor circulation, possible shock treatment.
Medical supervision for at least 48 hours.
If necessary oxygen respiration treatment.

5 Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
· **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
· **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.
Open and handle receptacle with care.
· **Information about fire - and explosion protection:**
Keep respiratory protective device available.
Emergency cooling must be available in case of nearby fire.

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· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Provide ventilation for receptacles.
Store in a cool location.
Store only in the original receptacle.
· **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials.
Store away from foodstuffs.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from humidity and water.
· **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:**	
108-95-2 phenol	
IOELV (EU)	7,8 mg/m³, 2 ppm Skin
PEL (USA)	19 mg/m³, 5 ppm Skin
REL (USA)	Short-term value: C60* mg/m³, C 15,6* ppm Long-term value: 19 mg/m³, 5 ppm *15-min; Skin
TLV (USA)	19 mg/m³, 5 ppm Skin; BEI
EL (Canada)	5 ppm Skin
EV (Canada)	19 mg/m³, 5 ppm Skin
112-24-3 3,6-diazaoctanethylenediamin	
WEEL (USA)	6 mg/m³, 1 ppm Skin
EV (Canada)	3 mg/m³, 0,5 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:**
Pregnant women should strictly avoid inhalation or skin contact.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing

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Wash hands before breaks and at the end of work.
Store protective clothing separately.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.

· **Respiratory protection:** Use suitable respiratory protective device when aerosol or mist is formed.
· **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.
· **For the permanent contact gloves made of the following materials are suitable:**
Fluorocarbon rubber (Viton)
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Neoprene gloves
Natural rubber, NR
· **Not suitable are gloves made of the following materials:**
Only glove materials listed above should be used.
· **Eye protection:**
Contact lenses should not be worn.


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:	Amber coloured

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· **Odour:**	Amine-like
· **Odour threshold:**	Not determined.
· **pH-value:**	App. 10,0
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	> 230°C (> 446 °F)
· **Flash point:**	136°C (277 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	Not determined.
· **Decomposition temperature:**	Not determined.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	1,0 Vol %
Upper:	10,0 Vol %
· **Vapour pressure at 20°C:**	< 1,0 hPa
· **Density at 20°C:**	1,08 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with water:**	Insoluble.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **9.2 Other information**	No further relevant information available.

10 Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions**
Reacts with catalysts, oxidizing agents and strong alkali.
Exothermic polymerization.
Reacts with peroxides.
· **10.4 Conditions to avoid** Store away from oxidizing agents.

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· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:**
Nitrogen oxides
Carbon monoxide and carbon dioxide

11 Toxicological information

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

· **LD/LC50 values relevant for classification:**		
108-95-2 phenol		
Oral	LD50	270 mg/kg (mouse)
		317 mg/kg (rat)
Dermal	LD50	669 mg/kg (rat)
		850 mg/kg (rabbit)
Inhalative	LC50/4 h	0,316 mg/l (rat)
112-24-3 3,6-diazaoctanethylenediamin		
Oral	LD50	2500 mg/kg (rat)
Dermal	LD50	805 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **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:** The product contains materials that are harmful to the environment.
· **12.2 Persistence and degradability** The product is partly biodegradale. Significant residuals remain.
· **12.3 Bioaccumulative potential**
Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
· **12.4 Mobility in soil** No further relevant information available.

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· **Additional ecological information:**
· **General notes:**
At present there are no ecotoxicological assessments.
This statement was deduced from the properties of the single components.
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralized.
Avoid transfer into 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.
· **Recommended cleansing agents:** Water only.

14 Transport information

· **14.1 UN-Number**
· **DOT, ADR, IMDG, IATA** UN1760

· **14.2 UN proper shipping name**
· **DOT, IMDG, IATA** Corrosive Liquid, N.O.S. (Phenol, Polyamines)
· **ADR** 1760 Corrosive Liquid, N.O.S. (Phenol, Polyamines)
·

14.3 Transport hazard class(es)

· **DOT**

· **Class** 8 Corrosive substances.

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· **Label**	8
· **ADR**	
	
· **Class**	8 (C9) Corrosive substances.
· **Label**	8
· **IMDG, IATA**	
	
· **Class**	8 Corrosive substances.
· **Label**	8
· **14.4 Packing group**	
· **DOT, ADR, IMDG, IATA**	III
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Warning: Corrosive substances.
· **Danger code (Kemler):**	80
· **EMS Number:**	F-A,S-B
· **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":**	UN1760, Corrosive Liquid, N.O.S., 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):**	
108-95-2	phenol
· **Section 313 (Specific toxic chemical listings):**	
108-95-2	phenol
· **TSCA (Toxic Substances Control Act):**	
All ingredients are listed.	

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· **Proposition 65 (California):**

· **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)**		
108-95-2	phenol	I
· **IARC (International Agency for Research on Cancer)**		
None of the ingredients is listed.		
· **TLV (Threshold Limit Value established by ACGIH)**		
108-95-2	phenol	A4
· **NIOSH-Ca (National Institute for Occupational Safety and Health)**		
None of the ingredients is listed.		
· **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%)**	
112-24-3	3,6-diazaoctanethylenediamin
· **Canadian Ingredient Disclosure list (limit 1%)**	
108-95-2	phenol

· **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**
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.

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H341: Suspected of causing genetic defects.
H373: May cause damage to organs through prolonged or repeated exposure.
H412: Harmful to aquatic life with long lasting effects.

R21: Harmful in contact with skin.
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
R34: Causes burns.
R36: Irritating to eyes.
R43: May cause sensitisation by skin contact.
R48/20/21/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R68: Possible risk of irreversible effects.

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