

QNUMSG UNDERMOUNT STUD EPOXY

APPLICATION INFORMATION

Surface Preparation:

This epoxy works best on clean surfaces. Surfaces should be solvent-wiped, free of heavy deposits of grease, oil, dirt or other contaminants, or cleaned with industrial cleaning equipment such as vapor phase degreasers or hot aqueous baths. Abrading or roughing the surfaces of metals will increase the microscopic bond area significantly and optimize the bond strength.

MIXING:

Proper homogeneous mixing of the two epoxy components of resin and hardener are essential for the curing and development of stated strengths. Always mix the two components with clean tools, preferably of a disposable design.

APPLICATION:

Apply mixed epoxy directly to one surface in an even film or as a bead. Assemble with the mating part within the recommended working time. Obtain firm contact between the parts to minimize any gap and ensure good contact of the epoxy with the mating part. A small fillet of epoxy should flow out the edges to show there is adequate gap filling. For very large gaps, apply epoxy to both surfaces and spread to cover the entire area, or make a bead pattern which will allow flow throughout the joint.

Let bonded assemblies stand for the recommended functional cure time before handling. They are capable of withstanding processing forces at this point, but should not be dropped, shock loaded, or heavily loaded.

CURE:

Cure time for this epoxy is 3/4 to 1 hour for a functional cure. Full bond strength is reached in 16 hours.

STORAGE AND SHELF LIFE:

Epoxy adhesives should be stored in a cool, dry place when not used for a long period of time. A shelf life of 1 year from date of manufacture can be expected when stored at room temperature 70F (22C) in their original containers.

Part No. 633

Material Data Sheet

FOR CHEMICAL EMERGENCIES PLEASE CONTACT: 1-800-535-5053

RAPID SET EPOXY GEL RESIN

Last revised: 11/17/99

Printed: 01/26/01

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: EPOXY RESIN

Chemical family: Epoxy resin

General information: This information applies to the resin component of the two-part kit; handle freshly-mixed resin and hardener as recommended for the hardener. After curing, the product is not hazardous.

CUSTOM PACKAGED FOR

CHEMICAL CONCEPTS
410 PIKE ROAD
HUNTINGDON VALLEY, PA 19006

EMERGENCY INFORMATION

Emergency telephone number
(CHEMTREC) (800) 424-9300
Other Calls: (215) 357-2754
(800) 220-1966

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#
Bisphenol A diglycidyl ether resin	25068-98-6

60-100 by Weight

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance, physical form, odor: viscous liquid with little odor.

CAUTION! Eye and skin irritant (evidenced by itching, redness). Potential skin sensitizer. Avoid contact with eyes. Avoid prolonged or repeated skin contact. Don't not take internally. Wash thoroughly after handling.

Potential health effects:

Primary routes of exposure:

Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:**Skin:**

Moderate irritant. Contact at elevated temperatures can cause thermal burns. May cause skin sensitization (rashes, hives).

Eyes:

Moderate irritant. Contact at elevated temperatures can cause thermal burns

Inhalation:

The low vapor pressure of the resin makes inhalation unlikely in normal use.

Ingestion:

Acute oral toxicity is low. May cause gastric distress.

Effects of chronic overexposure:

Prolonged or repeated skin contact may cause sensitization, with itching, swelling, or rashes on later exposure.

Medical conditions which may be aggravated by exposure:

Preexisting eye and skin disorders. Development or preexisting skin or lung allergy symptoms may increase.

Carcinogenicity – OSHA regulated: No **ACGIH:** No **National Toxicology Program:** No
International Agency for Research on Cancer: No
Cancer-suspect constituents(s): None

Other effects

See section 11.

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Immediately remove contaminated clothing and excess contaminant. Flush skin with water. Wash thoroughly with soap and warm water. Consult a physician if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Administer oxygen if Breathing is difficult. Get medical attention if symptoms persist.

First aid for ingestion:

Do NOT induce vomiting. Give two glasses of water to dilute if patient is conscious. Get medical attention

Note to physician:

In general, emesis induction is unnecessary in high viscosity, low volatility product, e.g., neat epoxy resins.

5. FIRE FIGHTING MEASURES**Extinguishing media:**

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (oF): >400**Method:** PMCC**Explosive limits in air – Lower:** n/d**Upper:** n/d**Special firefighting procedures:**

Material will not burn unless preheated. Do not enter confined space without full bunker gear. Firefighters should wear self-contained breathing apparatus and protective clothing. Cool fire exposed containers with water.

Unusual fire and explosion hazards:

Heating above 300 deg F in the presence of air may cause slow oxidative decomposition and above 500 deg F may cause polymerization.

Hazardous products of combustion:

When heated to decomposition it emits fumes of Cl-, carbon monoxide, other fumes and vapors varying in composition and toxicity.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Avoid personal contact. Eliminate ignition sources. Ventilate area.

Containment:

Dike, contain and absorb with clay, sand or other suitable material.

Cleanup:

For large spills, pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand, or other suitable material and dispose of properly. Flush area with water to remove trace residue.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters.

7. HANDLING AND STORAGE**Handling precautions:**

Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after using and particularly before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing and protective gear before reuse. Discard contaminated leather articles. Handle mixed resin and hardener in accordance with the potential hazard of the curing agent used. Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against nuisance dust during sanding/grinding of cured product.

Storage precautions:

Store in a cool, dry area away from high temperatures and flames.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Ventilation:

Local exhaust ventilation is preferred although good general mechanical ventilation is usually adequate for most industrial applications. Local exhaust is recommended for confined areas.

Other engineering controls:

Have emergency shower and eye wash available.

Personal protective equipment

Eye and face protection:

Safety glasses with side shields.

Skin Protection:

Chemical-resistant gloves and other gear as required to prevent skin contact.

Respiratory protection:

None required at normal handling temperatures and condition. Use NIOSH approved organic vapor cartridges for uncured resin and dust/particle respirators during grinding/sanding operations of cured resin as exposure levels dictate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity	1.1-1.3	Boiling point (°F)	>500
Melting point (°F)	n/d	Vapor density (air =1)	>1
Vapor pressure (mmHg):	0.03 mm Hg at 171 °F	Evaporation rate (butyl acetate = 1)	<<1
VOC (grams/liter):	0	Solubility in water:	Negligible
Percent Volatile by volume:	0	Ph (5% solution or slurry in water):	neutral
Percent solids by weight:	100		

10. STABILITY AND REACTIVITY

This product is chemically stable.

Hazardous polymerization will not occur.

Conditions to avoid:

Open flame and extreme heat

Incompatible materials:

Strong Liquids or mineral acids, strong oxidizing agents, strong mineral and organic bases (especially primary and secondary aliphatic amines).

Hazardous decomposition products:

Oxides of carbon; aldehydes, acids and other organic substances may be formed during combustion or elevated temperature (>500 deg F) degradation.

Conditions of hazardous polymerizations:

Heat is generated when resin is mixed with curing agents; Run-a-way cure reactions may char and decompose the resin, generating unidentified fumes and vapors which may be toxic.

11. TOXICOLOGICAL INFORMATION

Acute oral effects

LD50 (rat): Not available

Acute dermal effects
LD50 (rabbit): Not available

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Acute inhalation effects:
LC50 (rat): Not available. in 4 hours

Eye irritation:
Not available.

Subchronic effects
No data available

Chronic effects
2-year bioassays in mice exposed by the dermal route EPON 828, DGEBPA, or other commercial resins yielded limited evidence of weak carcinogenicity. The authors concluded that the renal tumor evidence with EPON 828 "was of no biological significance" and that the resin "is not a systemic carcinogen when applied to the dorsal skin of CF1 mice".

Carcinogenicity, teratogenicity, and mutagenicity:

Both the resin and the diglycidyl ether of bisphenol A (a component of this product) have proved to be inactive when tested by In Vivo mutagenicity assays. Both have shown activity by In Vitro microbial mutagenicity screening and have produced chromosomal aberrations in cultured rat liver cells.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat, 4 hours)
Phenol, polymer with formaldehyde, glycidyl ether	>5000 mg/kg	>6000 mg/kg	>1.7 mg/L
Bisphenol A diglycidyl ether resin	11.4 g/kg	>20 ml/kg	no deaths

12. ECOLOGICAL INFORMATION

Ecotoxicity:

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available

13. DISPOSAL CONSIDERATIONS

Waste management recommendations:

If this resin becomes a waste, it would not be a hazardous waste by RCRA criteria (40CFR 261). Dispose of according to applicable federal, state, and local regulations

14. TRANSPORT INFORMATION

Proper Shipping name: Non-regulated

Technical name: N/A

Hazard class: N/A

UN number: N/A

Emergency Response Guide no:

Packing group: N/A

N/A

IMDG Page no: N/A

Other: N/A

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15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA:

All ingredients of this product are listed, or are exempt from listing, on the TSCA Inventory.

The following RCRA code (s) applies to this material if it becomes waste: None

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ(lbs) Notification	TSCA 12 Export
Phenol, polymer with formaldehyde, glycidyl ether	No	No	No	Not required
Bisphenol A diglycidyl ether resin	No	No	No	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substances list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. Consult the appropriate regulations for specific requirements.

Classification of this material for SARA Section 312 hazardous materials inventory reporting:

Immediate health hazard Delayed health hazard

Canadian regulations

WHMIS hazard class (es): D2B

All components of this product are on the Domestic Substances List.

16. OTHER INFORMATION

Hazardous Materials Information System (HMIS) ratings:		
Health	Flammability	Reactivity
3*	1	1

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness, or as to the results of reliance on his document.

CHEMICAL CONCEPTS

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RAPID SET EPOXY GEL HARDENER

Last revised: 11/17/99

Printed: 01/26/01

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical family Polymercaptan/polyamine mixture

General information: The following information applies to the hardener component of the two-part kit and to freshly mixed resin and hardener. After curing, Rapid Set Epoxy Gel Hardener is not hazardous.

CUSTOM PACKAGED FOR:**EMERGENCY INFORMATION**

CHEMICAL CONCEPTS
555 West Annsbury Street
Philadelphia PA 19140-1487

Emergency telephone number
(CHEMTREC) (800) 424-9300
Other Calls: (215) 457-1940
(800) 220-1966

2. COMPOSITION/INFORMATION ON INGREDIENTS**HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Phenol, polymer with formaldehyde, glycidly ether		28064144	10-20	n/e	n/e	n/e
Bisphenol A diglycidyl ether resin	DGEB PA	25068386	70-90	n/e	n/e	n/e

"TLV means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless other wise noted) as established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, physical form, odor: viscous liquid with little odor.

CAUTION! Eye and skin irritant (evidenced by itching, redness). Potential skin sensitizer.
Avoid contact with eyes. Avoid prolonged or repeated skin contact. Don't not take internally. Wash thoroughly after handling.

Potential health effects:**Primary routes of exposure:**

Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:**Skin:**

Moderate irritant. Contact at elevated temperatures can cause thermal burns. May cause skin sensitization (rashes, hives).

Eyes:

Moderate irritant. Contact at elevated temperatures can cause thermal burns

Inhalation:

The low vapor pressure of the resin makes inhalation unlikely in normal use.

Ingestion:

Acute oral toxicity is low. May cause gastric distress.

Effects of chronic overexposure:

Prolonged or repeated skin contact may cause sensitization, with itching, swelling, or rashes on later exposure.

Medical conditions which may be aggravated by exposure:

Preexisting eye and skin disorders. Development or preexisting skin or lung allergy symptoms may increase.

Carcinogenicity – OSHA regulated: No **ACGIH:** No **National Toxicology Program:** No
International Agency for Research on Cancer: No
Cancer-suspect constituents(s): None

Other effects

See section 11.

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Immediately remove contaminated clothing and excess contaminant. Flush skin with water. Wash thoroughly with soap and warm water. Consult a physician if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Administer oxygen if Breathing is difficult. Get medical attention if symptoms persist.

First aid for ingestion:

Do NOT induce vomiting. Give two glasses of water to dilute if patient is conscious. Get medical attention

5. FIRE FIGHTING MEASURES**Extinguishing media:**

Water Carbon dioxide Dry chemical Foam Alcohol foam

Flash Point (°F): >200

Explosive limits in air – Lower: n/d

Upper: n/d

Special firefighting procedures:

Firefighters should wear self-contained breathing apparatus and protective clothing in confined areas. Cool containers with water spray.

Unusual fire and explosion hazards:

Toxic smoke and vapors may form during combustion.

Hazardous products of combustion:

Oxides of carbon, oxides of sulfur, oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Spill control:

Avoid personal contact. Eliminate ignition sources. Ventilate area.

Containment:

Dike, contain and absorb with clay, sand or other suitable material.

Cleanup:

For large spills, pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand, or other suitable material and dispose of properly. Flush area with water to remove trace residue.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters.

7. HANDLING AND STORAGE

Handling precautions:

Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after using and particularly before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing and protective gear before reuse. Discard contaminated leather articles. Handle mixed resin and hardener in accordance with the potential hazard of the curing agent used. Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against nuisance dust during sanding/grinding of cured product.

Storage precautions:

Store in a cool, dry area away from high temperatures and flames.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

Ventilation:

General mechanical ventilation is adequate for occasional use. For prolonged or repeated use, local exhaust is recommended.

Other engineering controls:

Have emergency shower and eye wash stations available.

Personal protection equipment

Eye and face protection:

Safety glasses with side shields or chemical goggles.

Skin Protection:

Chemical-resistant rubber (for example, neoprene, butyl rubber or nitrile) gloves and other protective gear as needed to prevent skin contact.

Respiratory protection:

None needed in normal use with proper ventilation. In poorly ventilated areas or when creating a dust or mist, use NIOSH-approved organic vapor respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity	1.1-1.3	Boiling point (°F)	n/d
Melting point (°F)	n/d	Vapor density (air =1)	n/d
Vapor pressure (mmHg):	<<1 at 70°F	Evaporation rate (butyl acetate = 1)	n/d
VOC (grams/liter):	0	Solubility in water:	Negligible
Percent Volatile by volume:	0	Ph (5% solution or slurry in water):	9.5
Percent solids by weight:	100		

10. STABILITY AND REACTIVITY

This product is chemically stable. Hazardous polymerization will not occur.

Conditions to avoid:

Open flame and extreme heat.

Incompatible materials:

Strong oxidizing agents.

Hazardous decomposition products:

Oxides in carbon, oxides of sulfur, oxides of nitrogen.

Conditions of hazardous polymerization:

When this hardener is mixed with an epoxy resin heat is generated; be careful when mixing more than an ounce or so.

11. TOXICOLOGICAL INFORMATION

Acute oral effects:

LD50(rat): Not available.

Acute dermal effects

LD50 (rabbit): Not available.
Rabbit: Severe irritant.

Acute inhalation effects:

LC50(rat): Not available in 0 hours

Eye irritation:

Rabbit: Severe irritant

Subchronic effects

Chronic effects

No data.

No data.

Carcinogenicity, teratogenicity, and mutagenicity:

No data.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat, 4 hours)
2,4,6-Tris(Dimethylaminomethyl) phenol	1670 mg/kg	1400 mg/kg	>0.5 mg/L
Polymercaptan curing agent	n/d	n/d	n/d

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

No data.

Mobility and persistence:

No data

Environmental fate:

No data

13. DISPOSAL CONSIDERATIONS**Waste management recommendation:**

If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40CFR 261).
Dispose of according to applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

Proper Shipping name: Non-regulated

Technical name: N/A

Hazard class: N/A

UN number: N/A

Packing group: N/A

IMDG Page no: N/A

Emergency Response Guide no:

N/A

Other: N/A

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA:**

All ingredients of this product are listed, or are exempt from listing, on the TSCA Inventory.

The following RCRA code (s) applies to this material if it becomes waste: None

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ(lbs)	TSCA 12 Export Notification
2,4,6-Tris (Dimethylaminomethyl) phenol	No	No	No	Not required
Polymercaptan curing agent	No	No	No	Not required

*Consult the appropriate regulation for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substances list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. Consult the appropriate regulation for specific requirements.

Classification of this material for SARA Section 312 hazardous materials inventory reporting:

Immediate health hazard Delayed health hazard

Canadian regulations

WHMIS hazard class (es): D2B

All components of this product are on the Domestic Substances List.

16. OTHER INFORMATION

Hazardous Materials Information System (HMIS) ratings:		
Health	Flammability	Reactivity
3*	1	1

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness, or as to the results of reliance on his document.

CHEMICAL CONCEPTS

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