

SUPER CERAMIC REPAIR LIQUID COLOR ADDITIVE

This product appears in the following stock number(s):

3292C 3292U 3293U

Last revised: 10/18/02

Printed: 12/12/2002

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** SUPER CERAMIC REPAIR LIQUID COLOR ADDITIVE**General use:** Pigment**Chemical family:** Organic Solvent**MANUFACTURER**ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936**EMERGENCY INFORMATION****Emergency telephone number****(CHEMTREC): (800) 424-9300****Other Calls: (215) 855-8450****2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Diacetone Alcohol		123422	10-20	50 ppm	50 ppm	240 mg/m ³ (NIOSH)
Carbon black		1333864	1-10	3.5 mg/m ³	3.5 mg/m ³	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) 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, form, odor: black liquid with solvent odor.

WARNING! Combustible. Eye, skin and respiratory irritant.**Potential health effects**

Primary routes of exposure: Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:**Skin:** Irritating to the skin.**Eyes:** Moderately irritating to the eyes (redness, tearing, blurred vision).**Inhalation:**

May cause irritation to the nose, throat and respiratory tract and may result in central nervous system depression.

Ingestion:

Irritating to the gastrointestinal tract, causing abdominal pain and vomiting, sometimes bloody. Ingestion may cause CNS depression and liver damage.

Effects of chronic overexposure:

Dryness and irritation of the skin. See Section 11.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s) : Carbon black

Medical conditions which may be aggravated by exposure:

Existing eye, skin and respiratory disorders. Anemia, liver and kidney disorders

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:

Give two glasses of water if patient is NOT unconscious or drowsy; induce vomiting by giving 2 tablespoons syrup of IPECAC. Keep victims head below hips while vomiting. Get medical attention.

5. FIRE FIGHTING MEASURES**General fire and explosion characteristics:**

Combustible liquid class III A.

Extinguishing media:

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): 146

Method: Literature

Explosive limits in air (percent) -- Lower: 1.8 **Upper:** 6.9

Special firefighting procedures:

Clear area of unprotected personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots) and positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water spray.

Unusual fire and explosion hazards:

Containers exposed to intense heat from fires could rupture from vapor pressure buildup.

Hazardous products of combustion:

Carbon monoxide, carbon dioxide and other unknown organic compounds.

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:

Wear appropriate respirator and protective clothing. Take up with an absorbent material and place in appropriate containers for disposal.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters. Use bonding/ grounding lines and non-sparking tools.

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

Do not breathe vapor or mist. Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Close container after each use. Ground container when pouring. Keep away from heat, flame or sparks. Use non-sparking tools.

Storage:

Keep in a cool place below 75 F, without direct exposure to sunlight. Keep container tightly closed and otherwise in accordance with NFPA regulations. Avoid contact with incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls****Ventilation :**

Use ventilation that is adequate to keep employee exposure to airborne concentrations below exposure limits.

Other engineering controls :

Keep container tightly closed. Observe label precautions. Have emergency eye wash and safety shower present.

Personal protective equipment**Eye and face protection:**

Wear safety glasses. Wear coverall chemical splash goggles and face shield when eye and face contact is possible.

Skin protection:

Wear chemical resistant gloves.

Respiratory protection:

A NIOSH/MSHA air purifying respirator with an organic vapor cartridge may be permissible, however use a positive pressure air supplied respirator if there is any potential for uncontrolled release, or unknown exposure levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	1.6	Boiling point (°F):	337
Melting point (°F):	n/d	Vapor density (air = 1):	> 1
Vapor pressure (mmHg):	0.8 mm Hg at 0 °F	Evaporation rate (butyl acetate = 1):	n/d
VOC (grams/liter):	340	Solubility in water:	n/d
Percent volatile by volume:	33	pH (5% solution or slurry in water):	n/d
Percent solids by weight:	79.1		

10. STABILITY AND REACTIVITY

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

Conditions to avoid :

Avoid heat , open flames, temperatures above 75 degrees F and ignition sources

Incompatible materials:

Strong acids, alkali, and oxidizing agents.

Hazardous products of decomposition:

Oxides of carbon and unidentified organic combustion products.

Conditions under which hazardous polymerization may occur:

Not likely.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): Not available

Acute dermal effects: LD50 (rabbit): Not available

Acute inhalation effects: LC50 (rat): Not available
Carbon black (1 hr, rat) LC50=27,000 mg/m3

Exposure: hours.

Eye irritation:

Not available

Subchronic effects:

Not available

Carcinogenicity, teratogenicity, and mutagenicity:

Carbon black has been shown to have In Vivo mutagenic effects on a rat lung cells.

Other chronic effects:

Overexposure to diacetone alcohol has been suggested as a cause of the following effects in laboratory animals, and may aggravate pre-existing disorders of these organs in humans: anemia, liver abnormalities and kidney damage.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Diacetone Alcohol	4000 mg/kg	13.5 g/kg	n/d
Carbon black	n/d	n/d	6750 mg/m3

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

Not available

Mobility and persistence:

Not available

Environmental fate:

Not available

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

Dispose of according to applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION**Proper shipping name:** Non-regulated**Technical name :****Hazard class :** N/A**UN number:****Packing group:****Emergency Response Guide no.:****IMDG page number:** N/A**Other:****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 12B Export Notification
Diacetone Alcohol	No	No	0.0	Required
Carbon black	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance 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. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard

classes apply to this material:

- Immediate health hazard -- Delayed health hazard -- Fire hazard -

Canadian regulations

WHMIS hazard class(es) : B3; D2B; D2A

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

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health 2*	Flammability 2	Reactivity 0
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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 completeness, or as to the results of reliance on this document.

SUPER CERAMIC REPAIR LIQUID HARDENER

This product appears in the following stock number(s):

3292C 3292U 3293U

Last revised: 07/10/01

Printed: 12/12/2001

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** SUPER CERAMIC REPAIR LIQUID HARDENER**General use:** The following data pertain to the hardener only; properly mixed and cured epoxies are not hazardous.**Chemical family:** Polyamines and modified polyamines**MANUFACTURER**ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936**EMERGENCY INFORMATION****Emergency telephone number**
(CHEMTREC): (800) 424-9300
Other Calls: (215) 855-8450**2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Diethylenetriamine	DETA	111400	> 40	1 ppm	1 ppm	1 ppm (Canada)
Isopropanol	IPA	67630	1-5	400 ppm	400 ppm	400 ppm (Canada)
Bisphenol A		80057	20-30	n/e	n/e	5 mg/m ³ (DFG-MAK)
Modified Aliphatic Polyamine		*	< 40	n/e	n/e	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) 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, form, odor: Dark liquid with mild ammonia-like odor.

DANGER! Corrosive. Eye, skin and respiratory irritant. Toxic by skin absorption. May cause skin or respiratory sensitization.
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Potential health effects
Primary routes of exposure: Skin contact Skin absorption Eye contact Inhalation Ingestion
Symptoms of acute overexposure:**Skin:** Severe irritant.

Eyes: Severe irritant

Inhalation:

Irritation of nose and throat; nausea and vomiting in severe cases

Ingestion:

May cause irritation of mouth and throat and gastrointestinal tract.

Effects of chronic overexposure:

Repeated skin contact can cause sensitization, with itching, rashes, or swelling of the skin. May cause respiratory sensitization/asthmatic response. Repeated and /or prolonged exposures may result in: adverse skin effects (such as defatting, rash, irritation or corrosion), adverse eye effects (such as conjunctivitis or corneal damage), and adverse respiratory effects (cough, tightness of chest, shortness of breath).

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer:No

Cancer-suspect constituent(s) : None

Medical conditions which may be aggravated by exposure:

Eye disease, skin disorders and allergies.

Other effects:

Repeated and/or prolonged exposure to low concentrations of vapor may cause: sore throat, eye irritation, nausea, faintness, headache, which are transient. Exposure to vapor may also cause minor transient edema of the corneal epithelium (blue-haze). This effect produces a blurring of vision against a general bluish haze and the appearance of halos around bright objects. The effect disappears spontaneously within a few hours of the end of exposure and leaves no sequelae.

4. FIRST AID MEASURES

First aid for eyes:

Immediately flush with clean water for at least 15 minutes while gently holding eyelids open. Get medical help as soon as possible.

First aid for skin:

Immediately remove contaminated clothing and shoes and wash well with soap and warm water. See a doctor if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Give oxygen or artificial respiration if needed. See a doctor if symptoms persist.

First aid for ingestion:

Do not induce vomiting. Dilute with lots of milk or water and get immediate medical help.

5. FIRE FIGHTING MEASURES

Extinguishing media:

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): >240

Method: CC

Explosive limits in air (percent) -- Lower: n/d

Upper: n/d

Special firefighting procedures:

Firefighters should wear self-contained breathing apparatus and sufficient protective gear to prevent all skin and eye contact with this material.

Unusual fire and explosion hazards:

Sudden reaction and fire may result if product is mixed with an oxidizing agent.

Hazardous products of combustion:

Acrid and toxic fumes with organic amines, ammonia, oxides of carbon and 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:

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 protective equipment**Eye and face protection:**

Safety glasses with sideshields 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:	1.0	Boiling point (°F):	n/d
Melting point (°F):	n/d	Vapor density (air = 1):	>1
Vapor pressure (mmHg):	<0.05 at 68 °F	Evaporation rate (butyl acetate = 1):	<<1
VOC (grams/liter):		Solubility in water:	Completely
Percent volatile by volume:	1.2	pH (5% solution or slurry in water):	Alkaline
Percent solids by weight:	98.8		

10. STABILITY AND REACTIVITY

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

Conditions to avoid :

Extreme heat or open flame

Incompatible materials:

Strong oxidizers, acids, and chlorinated organic compounds. May form explosive complexes with silver, cobalt, or chromium compounds. Corrosive to aluminum, copper, brass & zinc.

Hazardous products of decomposition:

Acrid and toxic fumes with organic amines, ammonia, oxides of carbon and nitrogen

Conditions under which hazardous polymerization may occur:

Heat is released when this product is mixed with epoxy resins; use care when mixing large quantities.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): No data

No data.

Acute dermal effects: LD50 (rabbit): No data

No data.

Acute inhalation effects: LC50 (rat): No data

No data.

Exposure: hours.

Eye irritation:

No data.

Subchronic effects:

No data.

Carcinogenicity, teratogenicity, and mutagenicity:

In an oral gavage screening study, DETA has been toxic to the fetus in laboratory animal tests.

Other chronic effects:

No data.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Diethylenetriamine	1080 mg/kg	1090 mg/kg	n/d
Isopropanol	5045 mg/kg	12.8 g/kg	22627 ppm
Bisphenol A	3250 mg/kg	3 mL/kg	n/d
Modified Aliphatic Polyamine	n/d	n/d	n/d

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION

Ecotoxicity:

DETA: Acute LC50 for water flea (*Daphnia magna*) is 17 mg/l; DETA: Acute LC50 for fathead minnow (*Pimephales promelas*) is 332 mg/L . DETA: Acute LC50 for brine shrimp (*Artemia salina*) is 710 mg/L.

Mobility and persistence:

No data.

Environmental fate:

No data.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

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: Diethylenetriamine solution

Technical name : N/A

Hazard class : 8

UN number: 2079

Packing group: II

Emergency Response Guide no.: 154

IMDG page number: 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 12B Export Notification
Diethylenetriamine	No	No	0.0	Required
Isopropanol	No	Yes	0.0	Required
Bisphenol A	No	Yes	0.0	Required
Modified Aliphatic Polyamine	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance 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. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -

Canadian regulations

WHMIS hazard class(es) : D2B; E

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

16. OTHER INFORMATION

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

Revisions for this issue:

MSDS section	Revisions
3	Updated health data.

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 completeness, or as to the results of reliance on this document.

SUPER CERAMIC REPAIR LIQUID RESIN

This product appears in the following stock number(s):

3292C 3292U 3293U

Last revised: 10/17/02

Printed: 12/12/2002

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** SUPER CERAMIC REPAIR LIQUID RESIN**General use:** 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.**Chemical family:** Epoxy resin**MANUFACTURER**ITW Philadelphia Resins
130 Commerce Dr.
Montgomeryville, PA 18936**EMERGENCY INFORMATION****Emergency telephone number**
(CHEMTREC): (800) 424-9300
Other Calls: (215) 855-8450**2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Aluminum oxide		1344281	15-40	10 mg/m3 (E)	15 mg/m3	10 mg/m3 (Canada)
1,4-Cyclohexanedimethanol Diglycidyl Ether		14228730	10-30	n/e	n/e	n/e
Crystalline silica		14808607	<1	0.05 mg/m3	10/(%Q+2) mg/m3	0.10 mg/m ³ (Canada)
Bisphenol A diglycidyl ether resin	DGEBPA	25068386	30-60	n/e	n/e	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) 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, form, odor: viscous liquid with little odor.

WARNING! Eye and skin irritant. Potential skin sensitizer.

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.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: Yes

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s) : Silica

Medical conditions which may be aggravated by exposure:

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

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 products, e.g., neat epoxy resins.

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

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): >400

Method: PMCC

Explosive limits in air (percent) -- 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:

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

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 conditions. 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:	1.6	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 material is chemically stable. Hazardous polymerization will not occur.

Conditions to avoid :

Open flame and extreme heat

Incompatible materials:

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

Hazardous products of decomposition:

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

Conditions under which hazardous polymerization may occur:

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): 11,400 mg/kg

Oral LD50 (mouse) = 15.6 g/kg

Acute dermal effects: LD50 (rabbit): >20 ml/kg

Acute inhalation effects: LC50 (rat): No deaths in saturated air

Exposure: 8 hours.

Eye irritation:

No data available.

Subchronic effects:

No data available.

Carcinogenicity, teratogenicity, and mutagenicity:

1) **MUTAGENICITY:** Liquid resins based on diglycidyl ether of Bisphenol A (DGEBPA), have proved to be inactive when tested by in vivo mutagenicity assays. These resins have shown activity in in vitro microbial mutagenicity screening and have produced chromosomal aberrations in cultured rat liver cells. The significance of these tests to man is unknown. 2) **CARCINOGENICITY:** Recent 2-year bioassays in rats and mice exposed by the dermal route to DGEBPA yielded no evidence of carcinogenicity to the skin or any other organs. This study clarifies prior equivocal results from a 2-year mouse skin painting study, which were suggestive, but not conclusive, for weak carcinogenic activity. 3) The International Agency for Research on Cancer (IARC) concluded that DGEBPA is not classifiable as a carcinogen (IARC group 3), that is human and animal evidence of carcinogenicity is inadequate.

Other chronic effects:

Prolonged or repeated skin contact may cause sensitization, with itching, swelling, or rashes on later exposure. Studies have shown bisphenol A diglycidyl ether resin to cause allergic contact dermatitis.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Aluminum oxide	n/d	n/d	n/d
1,4-Cyclohexanedimethanol Diglycidyl Ether	> 1000 mg/kg	> 1000 mg/kg	n/d
Crystalline silica	n/d	n/d	n/d
Bisphenol A diglycidyl ether resin	11.4 g/kg	>20 ml/kg	no deaths

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

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 :

Hazard class : N/A

UN number: N/A

Packing group: N/A

Emergency Response Guide no.:

IMDG page number: N/A

Other:

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 12B Export Notification
Aluminum oxide	No	Yes	0.0	Not required
1,4-Cyclohexanedimethanol Diglycidyl Ether	No	No	0.0	Required
Crystalline silica	No	No	0.0	Not required
Bisphenol A diglycidyl ether resin	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance 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. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -**Canadian regulations****WHMIS hazard class(es) :** D2B; D2A

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

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health 2*	Flammability 1	Reactivity 1
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Revisions for this issue:

MSDS section	Revisions
11	Updated ingredient section

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