

## Wear Guard™ Ultra Fine Load Resin

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

11570

Last revised: 12/01/2011

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Tradename:** WEAR GUARD™ ULTRA FINE LOAD

**Product Identifier:** EPOXY 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:** Metal filled epoxy resin.

### MANUFACTURER

ITW Devcon  
30 Endicott St.  
Danvers, MA 01923

**Emergency telephone number**  
(CHEMTREC): (800) 424-9300  
Other Calls: (978) 777-1100

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

#### HAZARDOUS CONSTITUENTS

#### Exposure limits

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Bisphenol A diglycidyl ether resin	DGEBPA	25068386	10-20	n/e	n/e	n/e
Diisopropylnaphthalene		38640629	1-10	n/e	n/e	n/e
Silicon carbide		409212	50-60	n/e	n/e	n/e
Alumina		1344281	20-30	n/e	n/e	n/e
Crystalline silica		14808607	0-2	0.05 mg/m <sup>3</sup>	10/(%Q+2) mg	0.10 mg/m <sup>3</sup> (Canada)

"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: Gray paste 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 which may result in permanent damage. May cause skin sensitization (itching, redness, rashes, hives, burning and swelling).

**Eyes:** Moderate irritant (stinging, burning sensation, tearing, redness, swelling). Contact at elevated temperatures can cause thermal burns which may result in permanent damage or blindness.

#### Inhalation:

The low vapor pressure of the resin makes inhalation unlikely in normal use. In applications where vapors (caused by high temperature) or mists (caused by mixing) are created, breathing may cause a mild burning sensation in the nose, throat and lungs.

**Ingestion:**

Acute oral toxicity is low. May cause gastric distress (nausea, vomiting and diarrhea).

**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) :** Respirable crystalline silica

**Medical conditions which may be aggravated by exposure:**

Preexisting eye and skin disorders (e.g. eczema). Development of preexisting skin or lung allergy symptoms may increase.

**Other effects:**

See section 11.

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**4. FIRST AID MEASURES**

**First aid for eyes:**

Flush eye with clean water for at least 20 minutes while gently holding eyelids open, lifting upper and lower lids. Get immediate medical attention.

**First aid for skin:**

Immediately remove contaminated clothing and excess contaminant. Flush skin with water for at least 15 minutes. 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. Rinse mouth out with water, then sip water to remove taste from mouth. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips (if sitting) or to the side (if lying down) to prevent aspiration. Get medical attention.

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**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. Personnel in vicinity and downwind should be evacuated.

**Hazardous products of combustion:**

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

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**6. ACCIDENTAL RELEASE MEASURES**

**Spill control:**

Avoid personal contact. Eliminate ignition sources. Ventilate area.

**Containment:**

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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. Collect run-off water and transfer to drums or tanks for later disposal. Notify local health authorities and other appropriate agencies if such contamination occurs.

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**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 dust during sanding/grinding of cured product.

**Storage:**

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

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering controls**

**Ventilation :**

Use ventilation that is adequate to keep employee exposure to airborne concentrations below exposure limits (or to the lowest feasible levels when limits have not been established). Although good general mechanical ventilation is usually adequate for most industrial applications, local exhaust ventilation is preferred (see ACGIH – Industrial Ventilation). Local exhaust may be required for confined areas (see OSHA 1910.146).

**Other engineering controls :**

Have emergency shower and eye wash available.

**Personal protective equipment**

**Eye and face protection:**

Chemical goggles if liquid contact is likely, or Safety glasses with side shields.

**Skin protection:**

Chemical-resistant gloves (i.e. butyl) and other gear as required to prevent skin contact.

**Respiratory protection:**

None needed in normal use with proper ventilation. In poorly ventilated areas use NIOSH approved organic vapor cartridge respirator for uncured resin, dust/particle respirator during grinding/sanding operations for cured resin, or fresh airline respirator as exposure levels dictate (see OSHA 1910.134).

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Specific gravity:</b>	2.36	<b>Boiling point (°F):</b>	>500
<b>Melting point (°F):</b>	n/d	<b>Vapor density (air = 1):</b>	>1
<b>Vapor pressure (mmHg):</b>	0.03 mm Hg at 171 °F	<b>Evaporation rate (butyl acetate = 1):</b>	<<1
<b>VOC (grams/liter):</b>	0	<b>Solubility in water:</b>	Negligible
<b>Percent volatile by volume:</b>	0	<b>pH (5% solution or slurry in water):</b>	neutral

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Percent solids by weight: 100

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## 10. STABILITY AND REACTIVITY

This material is chemically stable.

### 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.

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## 11. TOXICOLOGICAL INFORMATION

**Acute oral effects:** LD50 (rat): Not available.

**Acute dermal effects:** LD50 (rabbit): Not available.

**Acute inhalation effects:** LC50 (rat): Not available. Exposure: hours.

### Eye irritation:

Not 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:

DGEbPA: 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.

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**Toxicological information on hazardous chemical constituents of this product:**

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Bisphenol A diglycidyl ether resin	11.4 g/kg	>20 ml/kg	no deaths
Diisopropylnaphthalene	3.4g/kg	n/d	n/d
Silicon carbide	n/d	n/d	n/d
Alumina	n/d	n/d	n/d
Crystalline silica	n/d	n/d	n/d

'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. Incineration is the preferred method of disposal.

**14. TRANSPORT INFORMATION**

**Proper shipping name:** Non-regulated  
**Technical name :** N/A  
**Hazard class :** N/A  
**UN number:** N/A  
**Packing group:** N/A  
**Emergency Response Guide no.:** N/A  
**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
Bisphenol A diglycidyl ether resin	No	No	0.0	Not required
Diisopropyl naphthalene	No	No	0.0	Not required
Silicon carbide	No	No	0.0	Not required
Alumina	No	No	0.0	Not required
Crystalline silica	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**

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

## Wear Guard™ Ultra Fine Load Hardener

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

11570h

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Tradename:** Wear Guard™ Ultra fine Load Hardener

**Product Identifier:** EPOXY 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 Devcon  
30 Endicott St.  
Danvers, MA 01923

**Emergency telephone number**  
**(CHEMTREC): (800) 424-9300**  
**Other Calls: (978) 777-1100**

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

#### HAZARDOUS CONSTITUENTS

#### Exposure limits

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Triethylenetetramine	TETA	112243	1-10	n/e	n/e	1 ppm (skin) (AIHA-WEEL)
Aminoethylpiperazine	AEP	140318	1-10	n/e	n/e	n/e
Dimer/TOFA, reaction products with TETA		68082291	10-20	n/e	n/e	n/e
Alumina		1344281	40-60	n/e	n/e	n/e
Crystalline silica		14808607	<2	0.05 mg/m <sup>3</sup>	10/(%Q+2) mg	0.10 mg/m <sup>3</sup> (Canada)

"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: White paste with mild ammonia-like odor.

**WARNING!** Eye, skin and respiratory irritant. Harmful if absorbed through skin. Potential skin sensitizer.

#### Potential health effects

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

#### **Symptoms of acute overexposure:**

**Skin:** Severe irritation or burns, necrosis, blistering and permanent injury. Product can be absorbed through the skin and may cause nausea, headache and general discomfort.

**Eyes:** Severe irritation or burns. May cause lacrimation, conjunctivitis, corneal damage and may cause permanent injury. May cause blindness.

#### **Inhalation:**

If the hardener is poorly ventilated, strongly heated or atomized, the vapor or mist can cause severe irritation

of the respiratory tract (i.e. nose, throat, lungs), damage contacted tissue (i.e. burns) and produce scarring. coughing and chest pain may result, nausea and vomiting in severe cases.

**Ingestion:**

Causes severe damage to mucous membranes if swallowed. Burning of mouth, throat, and stomach with abdominal and chest pain. May cause perforation of the esophagus and the stomach. May cause malaise, headache and discomfort bleeding and vomiting of blood. Aspiration may result in lung damage.

**Effects of chronic overexposure:**

Repeated skin contact or inhalation may cause sensitization, with asthmatic or allergic symptoms on subsequent exposure (itching, rash, deflating, swelling, nausea, faintness, headache). Repeated or prolonged exposure may cause adverse respiratory effects (cough, tightness of chest, shortness of breath), eye effects (conjunctivitis, corneal damage), or skin effects (rash, irritation, eczemas, corrosion). Effects from inhalation of vapors may be delayed.

**Carcinogenicity -- OSHA regulated: No**                      **ACGIH: No**                      **National Toxicology Program: Yes**  
**International Agency for Research on Cancer: Yes**  
**Cancer-suspect constituent(s) :** Respirable crystalline silica

**Medical conditions which may be aggravated by exposure:**

Eye disease, skin disorders (e.g. eczema) and allergies, asthma and respiratory diseases (e.g. Bronchitis, Emphysema).

**Other effects:**

Repeated and/or prolonged exposure to low concentrations of vapor may cause: sore throat, eye irritation, nausea, faintness, headache, which are transient. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights which is transient and has no known residual effect.

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**4. FIRST AID MEASURES**

**First aid for eyes:**

Flush eye with clean water for at least 20 minutes while gently holding eyelids open, lifting upper and lower lids. Get immediate medical attention.

**First aid for skin:**

Immediately remove contaminated clothing and excess contaminant. Flush skin with water for at least 15 minutes. 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. If the heart is stopped, trained personnel should begin cardiopulmonary resuscitation. Get medical attention if symptoms persist.

**First aid for ingestion:**

Do NOT induce vomiting unless instructed to do so by medical personnel (i.e. doctor). Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips (if sitting) or to the side (if lying down) to prevent aspiration. Get immediate medical attention.

**Note to physician :**

Application of corticosteroid cream has been effective in treating skin irritation.

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**5. FIRE FIGHTING MEASURES**

**General fire and explosion characteristics:**

Class IIIB.

**Extinguishing media:**

- Water     Carbon dioxide     Dry chemical     Foam     Alcohol foam



**Flash Point (°F):** > 200

**Method:** TCC

**Explosive limits in air (percent) --**

**Lower:** n/d

**Upper:** n/d

**Special firefighting procedures:**

Do not enter confined space without full bunker gear. Firefighters should wear self-contained breathing apparatus and protective clothing to prevent all skin and eye contact with this material. Cool fire exposed containers with water.

**Unusual fire and explosion hazards:**

Sudden reaction and fire may result if product is mixed with an oxidizing agent. Personnel in vicinity and downwind should be evacuated. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains of water courses.

**Hazardous products of combustion:**

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

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**6. ACCIDENTAL RELEASE MEASURES**

**Spill control:**

Avoid personal contact. Evacuate area. 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. Clean-up waste water should be placed in appropriate containers for proper disposal.

**Special procedures:**

Prevent spill from entering drainage/sewer systems, waterways, and surface waters. Collect run-off water and transfer to drums or tanks for later disposal. Notify local health authorities and other appropriate agencies if such contamination occurs.

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**7. HANDLING AND STORAGE**

**Handling precautions:**

Avoid breathing vapors. Use in well ventilated areas. 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.

Laundry 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 dust during sanding/grinding of cured product. Do NOT mix with sodium nitrite or other nitrosating agents as cancer-causing nitrosamines could be formed.

**Storage:**

Store in a cool, dry area away from high temperatures and flames. Do not store in reactive metal containers. Keep away from acids, oxidizers. Keep container tightly closed when not in use.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering controls**

**Ventilation :**

Use ventilation that is adequate to keep employee exposure to airborne concentrations below exposure limits (or to the lowest feasible levels when limits have not been established). Although good general mechanical ventilation is usually adequate for most industrial applications, local exhaust ventilation is

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preferred (see ACGIH – Industrial Ventilation). Local exhaust may be required for confined areas (see OSHA 1910.146).

**Other engineering controls :**

Have emergency shower and eye wash available.

**Personal protective equipment**

**Eye and face protection:**

Chemical goggles if liquid contact is likely, or safety glasses with side shields.

**Skin protection:**

Chemical-resistant rubber (e.g. neoprene, butyl rubber, nitrile) gloves and other protective gear as needed to prevent skin contact. The breakthrough time of the selected glove(s) must be greater than the intended use period.

**Respiratory protection:**

None needed in normal use with proper ventilation. In poorly ventilated areas use NIOSH approved organic vapor cartridge respirator for uncured product, dust/particle respirator during grinding/sanding operations for cured product, or fresh airline respirator as exposure levels dictate (see OSHA 1910.134).

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Specific gravity:</b>	1.60	<b>Boiling point (°F):</b>	>450
<b>Melting point (°F):</b>	n/d	<b>Vapor density (air = 1):</b>	>1
<b>Vapor pressure (mmHg):</b>	<10mmHg at 70 °F	<b>Evaporation rate (butyl acetate = 1):</b>	<<1
<b>VOC (grams/liter):</b>	0	<b>Solubility in water:</b>	slight
<b>Percent volatile by volume:</b>	0	<b>pH (5% solution or slurry in water):</b>	10-11
<b>Percent solids by weight:</b>	100		

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**10. STABILITY AND REACTIVITY**

This material is chemically stable.

**Conditions to avoid :**

Extreme heat or open flame. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.

**Incompatible materials:**

Oxidizers, acids, Cl-organic cmpds. Reactive metals (e.g. Na, Ca, zinc). Sodium/calcium hypochlorite. Nitrous acid/ oxide, nitrites. Peroxides. Mat'ls reactive with hydroxyl cmpds.

**Hazardous products of decomposition:**

Acrid and toxic fumes with organic amines, ammonia, oxides of carbon and nitrogen. Nitric acid. Nitrosamines. Aldehydes. Acetylene.

**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.

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**11. TOXICOLOGICAL INFORMATION**

**Acute oral effects:** LD50 (rat): > 2000 mg/kg (estimate)

**Acute dermal effects:** LD50 (rabbit): > 1000 mg/kg (estimate)

TETA has been found to be toxic by skin absorption (ANSI Z129.1 1988). TETA is corrosive to the skin of a rabbit.

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**Acute inhalation effects:** LC50 (rat): Not available.

Exposure: hours.

**Eye irritation:**

TETA is a severe irritant to the eyes of a rabbit.

**Subchronic effects:**

No data available.

**Carcinogenicity, teratogenicity, and mutagenicity:**

TETA: has tested positive in screening tests for mutagenicity. Shown activity in some in vitro genotoxicity tests, but is negative in In vivo test. Found to be fetotoxic and teratogenic when fed to rats at 0.83% and 1.67% of diet. Several developmental toxicity studies have reported that it can cause adverse embryofetal effects. These effects, however, are associated with only high maternally toxic dosages with induction of severe copper deficiency. When applied dermally to the skin of pregnant guinea pigs, there was a 90% abortion rate or death of fetus with developmental anomalies.

**Other chronic effects:**

It has been generally observed in animal studies that aliphatic amines can cause changes in the lungs and heart. TETA has been found to produce liver and kidney damage and brain congestion in dermally exposed animals. Sensitization has occurred in laboratory animals after repeated exposures to TETA.

**Toxicological information on hazardous chemical constituents of this product:**

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Triethylenetetramine	2500 mg/kg	805 mg/kg	n/d
Aminoethylpiperazine	2140 mg/kg	880 mg/kg	n/d
Dimer/TOFA, reaction products with TETA	1620 mg/kg	2140 mg/kg	>1 mg/L
Alumina	n/d	n/d	n/d
Crystalline silica	n/d	n/d	n/d

'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.

**Information.**

**Waste management recommendations:**

If this hardener 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. Incineration is the preferred method of disposal.

**14. TRANSPORT INFORMATION**

**Proper shipping name:** Non-regulated

**Technical name :** N/A

**Hazard class :** N/A  
**UN number:** N/A  
**Packing group:** N/A  
**Emergency Response Guide no.:** N/A  
**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
Triethylenetetramine	No	No	0.0	Not required
Aminoethylpiperazine	No	No	0.0	Not required
Dimer/TOFA, reaction products with TETA	No	No	0.0	Not required
Alumina	No	No	0.0	Not required
Crystalline silica	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

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

**Other information:**

This material has been tested in accordance with the requirements of 49CFR 173.136 and found not to be corrosive for transportation.

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.