

IMPAX 5020 FLOOR RESURFACER HARDENER

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

4011U

Last revised: 10/01/03

Printed: 2/7/2005

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX 5020 FLOOR RESURFACER HARDENER**General use:** The following information applies to the hardener component of the two-part kit. When properly mixed and cured, the product is not hazardous.**Chemical family:** Polyamine curing agent**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
Benzyl alcohol	BZOH	100516	> 30	n/e	n/e	10 ppm (AIHA)
Phenol		108952	1-10	5 ppm	5ppm	5 ppm (Canada)
Triethylenetetramine	TETA	112243	1-10	n/e	n/e	1 ppm (skin) (AIHA-WEEL)
1,6-Diaminohexane		124094	< 10	0.5 ppm	n/e	5 mg/m3 (AIHA-WEEL)
Reaction Product of Amine, Phenol and Formaldehyde		68479801	< 35	n/e	n/e	n/e
1,2-Cyclohexanediamine		694837	< 25	n/e	n/e	n/e
Cycloaliphatic Amine		*	< 35	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: Amber liquid with ammoniacal odor.

WARNING! Eye, skin and respiratory irritant. Harmful if absorbed through skin. May cause skin and respiratory sensitization. Contains material which may cause kidney, liver, pancreas and spleen damage based on animal data.

Potential health effects

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

Symptoms of acute overexposure:

Skin: Severe irritant. Potential sensitizer.

Eyes: Severe irritant

Inhalation:

Irritation of nose and throat; nausea and vomiting in severe cases. Potential respiratory sensitizer.

Ingestion:

Ingestion may cause bleeding of the gastrointestinal tract and the vomiting of blood.

Effects of chronic overexposure:

1) Adsorption of phenolic solutions through the skin may be very rapid and can cause death. Lesser exposures can cause damage to the kidneys, liver, pancreas, and spleen, and edema of the lungs. Chronic exposures can cause death from liver and kidney damage. 2) TETA may cause respiratory sensitization and chronic lung toxicity (cough, tightness of chest, shortness of breath).

Carcinogenicity – OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s) : Silica

Medical conditions which may be aggravated by exposure:

Asthma. Chronic respiratory disease (e.g. Bronchitis, Emphysema). 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. Repeated and /or prolonged exposures may result in: adverse skin effects (such as defatting, rash, or irritation), adverse eye effects (such as conjunctivitis or corneal damage). Phenol is a human poison by ingestion.

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 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. 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):** > 200**Method:** PMCC**Explosive limits in air (percent) -- Lower:** n/d **Upper:** n/d**Special firefighting procedures:**

Firefighters should wear self-contained breathing apparatus and sufficient protective clothing to prevent eye and skin contact.

Unusual fire and explosion hazards:

Toxic fumes will be released when this material burns or is thermally decomposed.

Hazardous products of combustion:

Oxides of carbon, oxides of nitrogen, ammonia and unidentified organic combustion products.

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 breathing vapors. 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 silica dust during sanding/grinding of cured product.

Storage:

Store in a cool, dry area away from high temperatures and flames. Keep away from oxidizers. Keep container tightly closed when not in use.

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 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).

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	1.01	Boiling point (°F):	>350
Melting point (°F):	liquid	Vapor density (air = 1):	n/d
Vapor pressure (mmHg):	<1 at 70 °F	Evaporation rate (butyl acetate = 1):	n/d
VOC (grams/liter):	< 25	Solubility in water:	Appreciable
Percent volatile by volume:	0	pH (5% solution or slurry in water):	9.5-10.0
Percent solids by weight:	100		

10. STABILITY AND REACTIVITY

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

Conditions to avoid :

Exposure to open flame or extreme heat.

Incompatible materials:

Strong oxidizing agents, acids, and chlorinated organic compounds.

Hazardous products of decomposition:

Oxides of nitrogen and carbon; ammonia.

Conditions under which hazardous polymerization may occur:

Heat is released when this material is mixed with epoxy resin; be careful when mixing a pound or more.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): > 2200 mg/kg

No data.

Acute dermal effects: LD50 (rabbit): > 669 mg/kg, based on phenol

A moderate irritant to the skin of a rabbit. Phenol is rapidly absorbed through the skin and can cause death.

Acute inhalation effects: LC50 (rat): No data

Exposure: hours.

No data.

Eye irritation:

A severe irritant to the eye of a rabbit.

Subchronic effects:

Absorption of phenolic solutions through the skin may be very rapid and cause death. Lesser exposures can cause damage to the kidneys, liver, pancreas and spleen, and edema of the lungs.

Carcinogenicity, teratogenicity, and mutagenicity:

TETA has tested positive in screening tests for mutagenicity. TETA was found fetotoxic and teratogenic when fed to rats at 0.83% and 1.67% of diet. When applied dermally to the skin of pregnant guinea pigs, there was a 90% abortion rate or death of fetus with developmental anomalies. Phenol has been shown to produce fetotoxic effects in laboratory animals. Phenol has been shown to be a mutagenic in germ cells, in vivo.

Other chronic effects:

Repeated overexposure to phenol can cause effects on the heart and nervous system including changes in heart rate, blood pressure, respiration, as well as tremors and lung disorders. Chronic exposures can cause death from liver and kidney damage. It has been generally observed in animal studies that aliphatic amines can cause changes in the lungs, liver, kidneys and heart. TETA has been found to produce liver and kidney damage and brain congestion in dermally exposed animals.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Benzyl alcohol	1230 mg/kg	2000 mg/kg	> 2000 ppm
Phenol	317 mg/kg	630 mg/kg	> 3600 mg/m ³
Triethylenetetramine	2500 mg/kg	805 mg/kg	n/d
1,6-Diaminohexane	750 mg/kg	1110 mg/kg	n/d
Reaction Product of Amine, Phenol and Formaldehyde	n/d	n/d	n/d
1,2-Cyclohexanediamine	1 g/kg	n/d	> 3200 mg/m ³
Cycloaliphatic Amine	n/d	n/d	n/d

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

No data.

Mobility and persistence:

Phenol: Biodegradability = 99.5% at 7days.

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: Non-regulated

Technical name :

Hazard class : N/A

UN number: N/A

Packing group: N/A

Emergency Response Guide no.: N/A

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
Benzyl alcohol	No	No	0.0	Not required
Phenol	Yes	Yes	1000.0	Required
Triethylenetetramine	No	No	0.0	Not required
1,6-Diaminohexane	No	No	0.0	Not required
Reaction Product of Amine, Phenol and Formaldehyde	No	No	0.0	Not required
1,2-Cyclohexanediamine	No	No	0.0	Not required
Cycloaliphatic Amine	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) : D1B; D2A

16. OTHER INFORMATION

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

Trade Secrecy Registry Numbers: New Jersey: 80100094-5055P; 80100094-5056P, 80100094-5057P.

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.

IMPAX 5020 FLOOR RESURFACER RESIN

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

4011U

Last revised: 01/18/05

Printed: 2/7/2005

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX 5020 FLOOR RESURFACER 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
1,4- Cyclohexanedimethanol diglycidyl Ether		14228730	10-20	n/e	n/e	n/e
2-Ethylhexyl glycidyl ether		2461156	1-10	n/e	n/e	n/e
Bisphenol A diglycidyl ether resin	DGEBPA	25068386	75-90	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: Straw liquid with irritating odor.

WARNING! Eye, skin and respiratory 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 (redness, itching, burning). Contact at elevated temperatures can cause thermal burns. May cause skin sensitization (rashes, hives).**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:

If the product is poorly ventilated, strongly heated or atomized, the vapor or mist can cause irritation of the respiratory tract. Coughing and chest pain may result.

Ingestion:

Acute oral toxicity is low. May cause gastric distress. Large oral doses may produce moderate depression and slight difficulty breathing.

Effects of chronic overexposure:

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, corrosion). 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 be a sensitizing agent causing allergic contact dermatitis.

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 (e.g. eczema) and allergies, asthma and respiratory diseases (e.g. Bronchitis, Emphysema). Development of preexisting skin or lung allergy symptoms may increase.

Other effects:

Repeated or prolonged exposure to low concentrations of vapor may cause sore throat and eye irritation, which are transient. See section 11.

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.

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: 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:

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

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.

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 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).

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	1.16	Boiling point (°F):	> 300
Melting point (°F):	n/d	Vapor density (air = 1):	>1
Vapor pressure (mmHg):	< 11 at 70 °F	Evaporation rate (butyl acetate = 1):	<<1
VOC (grams/liter):	< 25	Solubility in water:	< 1%
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 & organic bases (esp. primary and secondary aliphatic amines). Peroxides. Sodium or calcium hypochlorite.

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 (DGE BPA Resin)

Acute dermal effects: LD50 (rabbit): > 20 mg/l (DGE BPA Resin)

DGE BPA: Draize -1.6 (rabbit)

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

Exposure: hours.

Eye irritation:

DGEBPA: Draize -2 (rabbit)

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.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
1,4- Cyclohexanedimethanol diglycidyl Ether	> 1000 mg/kg	> 1000 mg/kg	n/d
2-Ethylhexyl glycidyl ether	7800 mg/kg	> 2000 mg/kg	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. 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
1,4- Cyclohexanedimethanol diglycidyl Ether	No	No	0.0	Required
2-Ethylhexyl glycidyl ether	No	No	0.0	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

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****Other information:**

Trade Secrecy Numbers: New Jersey: 80100094-5003P

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.

IMPAX PENETRATING EPOXY PRIMER HARDENER

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

8621H 8622H

Last revised: 12/21/05

Printed: 1/10/2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX PENETRATING EPOXY PRIMER 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 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
Benzyl alcohol	BZOH	100516	30-60	n/e	n/e	10 ppm (AIHA)
Ethylenediamine		107153	< 5	10 ppm	10 ppm	10 ppm (Canada)
Ethanediamine, n,n'-bis(1,3-dimethylbutylidene)-1,2-		25707704	20-40	n/e	n/e	n/e
Isophoronediamine		2855132	15-30	n/e	n/e	n/e
2,4,6-Tris(Dimethylaminomethyl)phenol	DMP	90722	1-10	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: light yellow liquid with mild ammonia-like odor.

DANGER! Corrosive. Combustible. Eye, skin and respiratory irritant. Toxic by skin absorption. May cause skin & 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: Harmful in contact with skin. Causes skin burns. If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Eyes: Causes eye burns. May cause blindness, Severe eye irritation (tearing, burning, swelling).

Inhalation:

Can cause severe eye, skin and respiratory tract burns. May cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure.

Ingestion:

Harmful if swallowed. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. May cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure

Effects of chronic overexposure:

Repeated skin contact or inhalation may cause chemical burns, permanent damage, and / or sensitization, with asthmatic or allergic symptoms on subsequent exposure (itching, rash, defatting, 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), skin effects (rash, irritation, eczemas, corrosion), or central nervous system effects. Effects from inhalation of vapors may be delayed.

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, asthma and respiratory diseases (e.g. Bronchitis, Emphysema), inflammatory and fibrotic respiratory diseases. Neurological disorders.

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.

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.

5. FIRE FIGHTING MEASURES**Extinguishing media:** Water Carbon dioxide Dry chemical Foam Alcohol foam**Flash Point (°F):** 142**Method:** Closed Cup**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. May form explosive mixtures in air. 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:

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

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.

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. Launder contaminated clothing and protective gear before reuse. Discard contaminated leather articles. Handle mixed resin and hardener in accordance with the potential hazards of both components. 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 and otherwise in accordance with NFPA regulations (i.e. Flammable and Combustible Liquid Code, NFPA 30).

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 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).

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	0.963	Boiling point (°F):	> 200
Melting point (°F):	n/d	Vapor density (air = 1):	> 1
Vapor pressure (mmHg):	<1mmHg at 70 °F	Evaporation rate (butyl acetate = 1):	n/d
VOC (grams/liter):	n/d	Solubility in water:	slight
Percent volatile by volume:	n/d	pH (5% solution or slurry in water):	alkaline
Percent solids by weight:	n/d		

10. STABILITY AND REACTIVITY

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

Conditions to avoid :

Extreme heat or open flame. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Container may become pressurized by carbon dioxide due to reaction with humid air or water.

Incompatible materials:

Oxidizers, acids, Cl-organic cmpds. Reactive metals (eg. Na, Ca, Zn). Sodium/calcium hypochlorite. Nitrous oxide,

nitrites. Peroxides. Mat'ls reactive with hydroxyl cmpds. Alcohol

Hazardous products of decomposition:

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

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): > 1000 mg/kg (estimate)

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

DMP is a severe skin irritant.

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

Exposure: hours.

Eye irritation:

DMP is a severe eye irritant.

Subchronic effects:

BZOH: Rats exposed orally to 800 mg/kg for 13 weeks exhibited CNS depression and histopathological changes in the brain, thymus and skeletal muscles. The No Observed Adverse Effect Level (NOAEL) was 400 mg/kg. DMP: Subchronic exposure in test animals has caused changes in the Central Nervous System.

Carcinogenicity, teratogenicity, and mutagenicity:

Not available.

Other chronic effects:

ETHYLENEDIAMINE: May cause sensitization of the respiratory tract and the development of an asthmatic reaction on further exposure. Cross-sensitization may occur by skin contact with this amine and other amines. DMP: Chronic overexposure to vapor has been reported to cause delayed lung injury and chemical pneumonia. DMP has caused dermal sensitization in some humans.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Benzyl alcohol	1230 mg/kg	2000 mg/kg	> 2000 ppm
Ethylenediamine	500 mg/kg	730 mg/kg	n/d
Ethanediamine, n,n'-bis(1,3-dimethylbutylidene)-1,2-	n/d	650 mg/kg	> 10 mg/L
Isophoronediamine	1030 mg/kg	n/d	n/d
2,4,6-Tris(Dimethylaminomethyl)phenol	1670 mg/kg	1400 mg/kg	> 0.5 mg/L

'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:**

If this hardener becomes a waste, dispose of according to applicable federal, state, and local regulations. If this product becomes a waste, it would be a hazardous waste by RCRA criteria (40CFR 261). Dispose of according to applicable federal, state, and local regulations. Do not dispose of in a landfill. Incineration is the preferred method of disposal. Empty containers still contain hazardous product residue (vapors and/or liquid). Follow all MSDS and label warnings even after container is emptied. Residual vapors in empty containers may explode on ignition - DO NOT pressurize, or expose to heat, flame, sparks, static electricity or other sources of ignition (i.e. cutting, drilling, grinding, or welding on or near container).

14. TRANSPORT INFORMATION

Proper shipping name:	Non-regulated
Technical name :	ISOPHORONEDIAMINE; 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL.
Hazard class :	8
UN number:	2735
Packing group:	III
Emergency Response Guide no.:	153
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
Benzyl alcohol	No	No	0.0	Not required
Ethylenediamine	Yes	No	5000.0	Not required
Ethanediamine, n,n'-bis(1,3-dimethylbutylidene)-1,2-	No	No	0.0	Not required
Isophoronediamine	No	No	0.0	Not required
2,4,6-Tris(Dimethylaminomethyl)phenol	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; E, D2A, D2B

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

16. OTHER INFORMATION

**Hazardous Materials
Identification System (HMIS)
ratings:**

Health

3*

Flammability

2

Reactivity

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.

IMPAX PENETRATING EPOXY PRIMER RESIN

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

8621R 8622R

Last revised: 12/21/05

Printed: 1/9/2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** IMPAX PENETRATING EPOXY PRIMER 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
Bisphenol A diglycidyl ether resin	DGEBPA	25068386	70-85	n/e	n/e	n/e
Alkyl Glycidyl Ether		68609972	15-30	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: light yellow liquid with 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. Slightly toxic and may be harmful if absorbed through skin. Contact at elevated temperatures can cause thermal burns which may result in permanent damage. May cause skin sensitization (itching, redness, rashes, hives, burning, 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, diarrhea).

Effects of chronic overexposure:

Prolonged or repeated skin contact may cause defatting, drying, cracking of skin, and sensitization (itching, swelling, burning sensation, redness, rashes).

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer: No

Cancer-suspect constituent(s): Phenyl glycidyl ether

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 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.

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

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): > 200

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⁻, 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 dust during sanding/grinding of cured product.

Storage:

Store in a cool, dry area away from high temperatures and flames. Keep containers closed when not in use.

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. 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 cartridges respirator for uncured resin, dust/ particle respirators during grinding/ sanding operations for cured resin, or fresh airline respirator as exposure levels dictate (see OSHA 1910.134).

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	1.1	Boiling point (°F):	> 200
Melting point (°F):	n/d	Vapor density (air = 1):	> 1
Vapor pressure (mmHg):	< 1 at 0 °F	Evaporation rate (butyl acetate = 1):	> 1
VOC (grams/liter):	n/d	Solubility in water:	slight
Percent volatile by volume:	n/d	pH (5% solution or slurry in water):	n/d
Percent solids by weight:	n/d		

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 (DGE BPA Resin)

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

DGE BPA: Draize -1.6 (rabbit). Alkyl Glycidyl Ether: Draize (rabbit, 24 hr) 3.4-5.7

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

Exposure: 8 hours.

Eye irritation:

DGEBPA: Draize -2 (rabbit). Alkyl Glycidyl Ether: Mild irritation (rabbit)

Subchronic effects:

Alkyl Glycidyl Ether: a 20 day exposure to rabbit skin to 2 ml of 5% solution/kg/day showed no histological evidence of toxicity.

Carcinogenicity, teratogenicity, and mutagenicity:

DGEBPA: 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. Alkyl Glycidyl Ether: reported to show positive results in In vitro mutagenicity tests.

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. Alkyl Glycidyl Ether: Sensitization has occurred in laboratory animals after repeated exposures.

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
Alkyl Glycidyl Ether	>19.2 g/kg	> 4.5 g/kg	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
Alkyl Glycidyl Ether	No	No	0.0	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.

California regulations:

For purposes of the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop. 65), this product contains a chemical or chemicals known to the State of California to cause cancer.

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health 2*	Flammability 1	Reactivity 1
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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.