

MARINE TEX GREY RESIN

Last revised: 01/28/00

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical family Epoxy resin

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

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
Carbon black		1333864	< 1	3.5 mg/m ³ 3	3.5 mg/m ³ 3	n/e
Crystalline silica		14808607	< 1	0.05 mg/m ³ 3	10/(% Q+2) mg/m ³	0.1 (Canada) 3
Bisphenol A diglycidyl ether resin	DGEB PA	25068386	35-45	n/e	n/e	n/e

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

3. HAZARDS IDENTIFICATION**Emergency Overview**

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

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

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

Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:**Skin:**

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

Eyes:

Moderate to severe irritant. May cause corneal damage. 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. May cause depression and slight difficulty breathing.

Effects of chronic overexposure:

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.

Medical conditions which may be aggravated by exposure:

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

Carcinogenicity -- OSHA regulated: No **ACGIH:** No **National Toxicology Program:** Yes

International Agency for Research on Cancer: Yes

Cancer-suspect constituent(s): Silica and carbon black

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.

First aid for ingestion:

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

5. FIRE FIGHTING MEASURES**Extinguishing media:** Water Carbon dioxide Dry chemical Foam Alcohol foam**Flash Point (°F):** > 400**Method:** estimate**Explosive limits in air -- Lower:** n/d**Upper:** n/d**Special firefighting procedures:**

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 nuisance dust during sanding/grinding of cured product.

Storage precautions:

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:**

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:	1.7	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		0

10. STABILITY AND REACTIVITY

This product is chemically stable.

Hazardous polymerization will not occur.

Conditions to avoid:

Open flame and extreme heat

Incompatible materials:

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

Hazardous decomposition products:

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

Conditions of hazardous polymerization:

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

11. TOXICOLOGICAL INFORMATION**Acute oral effects:**

LD50 (rat): Not available.

Acute dermal effects

LD50 (rabbit): Not available.

Acute inhalation effects:

LC50 (rat): Not available. in 8 hours

Carbon black (1 hr, rat) LC50=27,000 mg/m3

Eye irritation:

Not available.

Subchronic effects

Not available.

Chronic effects

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

Carcinogenicity, teratogenicity, and mutagenicity:

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

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat, 4 hours)
Carbon black	n/d	n/d	6750 mg/m3
Crystalline silica	n/d	n/d	n/d
Bisphenol A diglycidyl ether resin	11.4 g/kg	>20 ml/kg	no deaths

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available.

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

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

14. TRANSPORT INFORMATION

Proper shipping name: Non-regulated

Technical name: N/A

Hazard class: N/A

UN number: N/A

Packing group: N/A

IMDG Page no.: N/A

Emergency Response Guide no.: N/A

Other: N/A

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

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

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

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Expor Notification
Carbon black	No	No	No	Not required
Crystalline silica	No	No	No	Not required
Bisphenol A diglycidyl ether resin	No	No	No	Not required

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

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

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

Immediate health hazard Delayed health hazard

Canadian regulations

WHMIS hazard class(es): D2B; D2A

16. OTHER INFORMATION**Hazardous Materials Information System (HMIS) ratings:****Health****Flammability****Reactivity****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.

MARINE TEX CATALYST JELLY

Last revised: 08/07/00

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical family Modified aliphatic polyamine

General information: The following data pertain to the hardener only; properly mixed and cured epoxies are not hazardous.

MANUFACTURERITW 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	Constituent	Abbr.	CAS No.	Weight percent	Exposure limits		
					ACGIH TLV	OSHA PEL	Other Limits
	Diethylenetriamine	DETA	111400	30-40	1 ppm	1 ppm	1ppm (Canada)
	Polyamide of C18 fatty acid dimers and TETA		68410231	60-70	n/e	n/e	n/e

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

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, physical form, odor: Amber gel with mild ammonia-like odor.

DANGER! Corrosive. Causes eye and skin burns. Severe eye, skin and respiratory tract irritant (evidenced by rash, burning sensation, sore throat, nausea, shortness of breath). Harmful if absorbed through skin. May cause skin sensitization. Avoid breathing vapors. Use with adequate ventilation. Do not take internally. Wash thoroughly after handling.

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

Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:**Skin:**

Corrosive. Severe irritation (defatting, itching, redness, blistering), pain, burns and permanent damage. Product is absorbed through the skin and may cause nausea, general discomfort, injury and death unless treated promptly. Potential sensitizer.

Eyes:

Corrosive. Severe irritation (redness, swelling), pain or burns; may cause permanent eye injury (including blindness). Vapors can cause lacrimation, conjunctivitis, and corneal edema.

Inhalation:

Corrosive. Can cause irritation of respiratory tract and mucous membranes (nasal discharge, coughing, discomfort). Over exposure to fumes or vapors may cause lung injury. May cause nausea and vomiting. Inhalation of aerosols and mists may severely damage contacted tissue and produce scarring.

Ingestion:

May cause burns of mouth, throat and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst, weakness and collapse.

Effects of chronic overexposure:

Repeated skin contact or inhalation may cause sensitization / dermatitis, with allergic symptoms on subsequent exposure (rash, defatting, nausea, headaches). Repeated or prolonged exposure may cause adverse respiratory effects (cough, tightness of chest, shortness of breath, dryness of nasal passages), eye effects (conjunctivitis, corneal

Medical conditions which may be aggravated by exposure: May cause lung damage. Repeated oral exposure may aggravate existing skin disorders and allergies, eye disease, and respiratory conditions (i.e. bronchitis, emphysema).

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

Other effects:

Inhalation of ethyleneamines may cause sensitization of the respiratory tract and the development of an asthmatic reaction on further exposure. There may be susceptible individuals who develop long-term hyperreactive airways, asthma, and other respiratory injury following exposure to extremely low concentrations of ethyleneamines, even below the irritation threshold. Skin contact may cause sensitization and an allergic skin reaction. Cross-sensitization may occur by skin contact with this material and other amines. 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 holding eyelids open. Get medical help immediately.

First aid for skin:

Remove contaminated clothing, wipe off affected area. Flush with water for 15 minutes. Wash with soap & warm water. See 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. Prevent aspiration of vomit. Turn victims head to side.

First aid for ingestion:

Corrosive--do not induce vomiting. If patient is conscious, dilute with milk or water. Get immediate medical help. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES**Extinguishing media:** Water Carbon dioxide Dry chemical Foam Alcohol foam**Flash Point (°F):** >200**Method:** estimate**Explosive limits in air -- Lower:** n/d**Upper:** n/d**Special firefighting procedures:**

Firefighters should wear self-contained breathing apparatus and full protective gear. Keep containers cool with water spray.

Unusual fire and explosion hazards:

Personnel in vicinity and downwind should be evacuated. Sudden reaction and fire may result if mixed with oxidizing agent.

Hazardous products of combustion:

Oxides of carbon, oxides of nitrogen, ammonia. Toxic smoke and vapors may form during combustion.

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. Clean-up personnel must be equipped with self contained breathing apparatus and butyl rubber protective clothing.

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. Avoid breathing vapors. Handle in well ventilated work area.

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. Do not use sodium nitrite or other nitrosating agents in formulations containing this product, cancer-causing nitrosamines could be formed.

Storage precautions:

Keep away from acids and oxidizers. Store in a cool, dry, ventilated area in closed containers. Keep away from high temperatures (<100 F) and flames. Do not store in reactive metal containers.

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

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

Other engineering controls:

Have emergency shower and eye wash stations available.

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

Splashproof chemical goggles

Skin Protection:

Chemical-resistant rubber (i.e. butyl rubber, neoprene) 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, use NIOSH approved organic vapor masks.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	0.99	Boiling point (°F):	>400
Melting point (°F):	n/d	Vapor density (air = 1):	>1
Vapor pressure (mmHg):	<1	at 68 °F	Evaporation rate (butyl acetate = 1): <<1
VOC (grams/liter):	0	Solubility in water:	Miscible
Percent volatile by volume:	0	pH (5% solution or slurry in water):	10.5-11.5
Percent solids by weight:	100		0

10. STABILITY AND REACTIVITY

This product 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.

Incompatible materials:

Oxidizers, acids, reactive metals. Sodium or calcium hypochlorite. Nitrous acid, nitrites, nitrous oxide atm. Peroxides.

Hazardous decomposition products:

Acrid and toxic fumes including organic amines, ammonia, oxides of nitrogen (highly toxic) and carbon, nitric acid, nitrosamines.

Conditions of hazardous polymerization:

Heat is generated when this hardener reacts with acids and epoxy resins. Mix only as instructed.

11. TOXICOLOGICAL INFORMATION**Acute oral effects:**

LD50 (rat): > 1000 mg/kg (estimate)

Acute dermal effects

LD50 (rabbit): Not available.

DETA: Corrosive, sensitizer.

Acute inhalation effects:

LC50 (rat): Not available. in 0 hours

Eye irritation:

DETA: Corrosive

Subchronic effects

DETA may cause respiratory sensitization in susceptible individuals.

Chronic effects

DETA has caused liver and kidney damage in laboratory animals.

Carcinogenicity, teratogenicity, and mutagenicity:

DETA: Did not cause cancer in long-term animal studies. Teratology: No relevant information found.

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

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat, 4 hours)
Diethylenetriamine	1080 mg/kg	1090 mg/kg	n/d
Polyamide of C18 fatty acid dimers and TETA	>8000 mg/kg	>8000 mg/kg	n/d

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:

Not available.

Environmental fate:

Not available.

13. DISPOSAL CONSIDERATIONS**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: Corrosive liquid, basic, organic, n.o.s.

Technical name: Diethylenetriamine

Hazard class: 8

UN number: 3267

Packing group: III

IMDG Page no.: 8147-

Emergency Response Guide no.:

153

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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
Diethylenetriamine	No	No	No	Required
Polyamide of C18 fatty acid dimers and TETA	No	No	No	Not required

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

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

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

Immediate health hazard Delayed health hazard

Canadian regulations

WHMIS hazard class(es): D2B; E

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

16. OTHER INFORMATION

Hazardous Materials Information System (HMIS) ratings:		
Health	Flammability	Reactivity
3*	1	0

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.