

**PHILLYCLAD 300 HARDENER**

Last revised: 07/31/96

Printed: 08/11/98

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Chemical family Epoxy Resin Hardener

General information: PHILLYCLAD 300 HARDENER

**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
Triethylenetetramine	TETA	112243	< 5	n/e	n/e	n/e
Tetraethylenepentamine	TEPA	112572	< 2	n/e	n/e	n/e
Xylene		1330207	20-30	100 ppm	100 ppm	100 (CANAD) (A)
Dimer/TOFA, reaction products with TETA		68082291	> 50	n/e	n/e	n/e
4-Nonyl-phenol	NPHO H	84852153	< 10	n/e	n/e	n/e
Amidoamine		*	< 10	n/e	n/e	n/e
Amidoamine		*	< 10	n/e	n/e	n/e
Amidoamine		*	< 10	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: Dark amber liquid with aromatic odor.

**WARNING! Flammable. Keep away from heat, sparks, open flame. Severe eye and skin irritant. Overexposure may cause respiratory tract, mucous membrane irritation. Can cause CNS effects (evidenced by dizziness, headache, nausea and vomiting). Harmful if absorbed through skin. May cause skin sensitization. Avoid skin and eye contact. Wash thoroughly after handling. Avoid breathing vapor. Use with adequate ventilation. Keep container closed when not in use.**

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

Skin contact     Skin absorption     Eye contact     Inhalation     Ingestion

**Symptoms of acute overexposure:****Skin:**

May cause skin irritation

**Eyes:**

May cause eye irritation

**Inhalation:**

May cause respiratory irritation, headache, nausea, and dizziness.

**Ingestion:**

May irritate mouth and throat and cause symptoms similar to inhalation; drawing xylene into lungs when vomiting can severely damage lungs.

**Effects of chronic overexposure:**

Prolonged or repeated skin contact can cause irritation; prolonged or repeated inhalation can cause neural dysfunction with dizziness, drowsiness, and loss of coordination. Target Organs: Eye, GI system, liver, kidney, CNS, Respiratory system and skin. TETA may cause respiratory sensitization and chronic lung toxicity (cough, tightness of

**Medical conditions which may be aggravated by exposure:**    ns of TEPA and TETA may cause injury to  
Asthma, Chronic respiratory disease, kidney disorders, liver disorders. Skin disorders and Allergies.

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

**International Agency for Research on Cancer:** No

**Cancer-suspect constituent(s):** None

**Other effects:**

No data.

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

Flush with water for at least 15 minutes and seek medical attention.

**First aid for skin:**

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:**

Get medical help. Do not induce vomiting; if patient vomits, keep head below hips to prevent drawing vomitus into lungs.

### 5. FIRE FIGHTING MEASURES

**Extinguishing media:** Water Carbon dioxide Dry chemical Foam Alcohol foam**Flash Point (°F):** 92**Method:** PMCC**Explosive limits in air -- Lower:** 1.0**Upper:** 7.0**Special firefighting procedures:**

Firefighters should wear self-contained breathing apparatus and protective clothing. Water spray may be used to cool fire-exposed containers and to flush spills away from fire exposure.

**Unusual fire and explosion hazards:**

Heat of a fire may cause closed containers to burst. Xylene vapor can travel along floors to an ignition source.

**Hazardous products of combustion:**

Carbon monoxide, carbon dioxide, and oxides of nitrogen.

### 6. ACCIDENTAL RELEASE MEASURES

**Spill control:**

Avoid personal contact. Eliminate ignition sources. Ventilate area.

**Containment:**

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

**Cleanup:**

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

**Special procedures:**

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

### 7. HANDLING AND STORAGE

**Handling precautions:**

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

**Storage precautions:**

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

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls****Ventilation:**

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

**Other engineering controls:**

Have emergency shower and eye wash available.

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

Safety glasses with side shields.

**Skin Protection:**

Impervious rubber or plastic gloves; clean long-sleeved and long-legged clothing.

**Respiratory protection:**

Where vapor concentration exceeds the TLV, use NIOSH-approved air-supplying or air-purifying organic vapor respirator.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Specific gravity:</b>	0.9	<b>Boiling point (°F):</b>	280
<b>Melting point (°F):</b>	n/d	<b>Vapor density (air = 1):</b>	n/d
<b>Vapor pressure (mmHg):</b>	25 (xylene)	<b>Evaporation rate (butyl acetate = 1):</b>	<0.6
	at 77 °F	<b>Solubility in water:</b>	Nil
<b>VOC (grams/liter):</b>	207	<b>pH (5% solution or slurry in water):</b>	n/d
<b>Percent volatile by volume:</b>	24		0
<b>Percent solids by weight:</b>	76		

**10. STABILITY AND REACTIVITY**

This product is chemically stable.

Hazardous polymerization will not occur.

**Conditions to avoid:**

Open flames, sparks or extreme heat.

**Incompatible materials:**

Strong acids and bases

**Hazardous decomposition products:**

Carbon monoxide, carbon dioxide, and oxides of nitrogen.

**Conditions of hazardous polymerization:**

None

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

LD50 (rat): No data available

**Acute dermal effects**

LD50 (rabbit): No data available

**Acute inhalation effects:**

LC50 (rat): No data available in 4 hours

**Eye irritation:****Subchronic effects**

No data available.

**Chronic effects**

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.

**Carcinogenicity, teratogenicity, and mutagenicity:**

Developmental toxicity studies with xylene have shown embryolethal/toxic and teratogenic effects with maternal toxicity. 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. TEPA has exhibited evidence for weak mutagenic activity in vitro test systems.

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

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat, 4 hours)
Triethylenetetramine	2460 mg/kg	805 mg/kg	n/d
Tetraethylenepentamine	205 mg/kg	660 mg/kg	n/d
Xylene	4300 mg/kg	>3160 mg/kg	5000 ppm
Dimer/TOFA, reaction products with TETA	n/d	n/d	n/d
4-Nonyl-phenol	1620 mg/kg	2140 mg/kg	>1 mg/L
Amidoamine	n/d	n/d	n/d
Amidoamine	n/d	n/d	n/d
Amidoamine	n/d	n/d	n/d

**12. ECOLOGICAL INFORMATION****Ecotoxicity:**

No data available.

**Mobility and persistence:**

No data available.

**Environmental fate:**

No data available.

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

Do not dispose of in a landfill. Incineration is the preferred method of disposal. Dispose of in accordance with all applicable state, federal and local regulations.

**14. TRANSPORT INFORMATION**

**Proper shipping name:** RESIN SOLUTION

**Technical name:**

**Hazard class:** 3

**UN number:** 1866

**Packing group:** III

**IMDG Page no.:**

**Emergency Response Guide no.:** 127

**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: D001

**Regulatory status of hazardous chemical constituents of this product:**

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Triethylenetetramine	No	No	No	Not required
Tetraethylenepentamine	No	No	No	Not required
Xylene	No	Yes	No	Not required
Dimer/TOFA, reaction products with TETA	No	No	No	Not required
4-Nonyl-phenol	No	No	No	Required
Amidoamine	No	No	No	Not required
Amidoamine	No	No	No	Not required
Amidoamine	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 Fire hazard

**Canadian regulations**

WHMIS hazard class(es): B2;D2B

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

**16. OTHER INFORMATION**

Hazardous Materials Information System (HMIS) ratings:		
Health	Flammability	Reactivity
2*	3	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.

**PHILLYCLAD 300 DECK GRAY RESIN**

Last revised: 12/22/97

Printed: 08/11/98

***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
Propylene glycol monomethyl ether		107982	< 5	100 ppm	n/e	100 (CANAD ) (A)
Xylene		1330207	1-5	100 ppm	100 ppm	100 (CANAD ) (A)
Carbon black		1333864	< 0.5	3.5 mg/m <sup>3</sup>	3.5 mg/m <sup>3</sup>	n/e
Polymers of epoxy resin and bisphenol A		25036253	10-20	n/e	n/e	n/e
Bisphenol A diglycidyl ether resin	DGEB PA	25068386	1-5	n/e	n/e	n/e
Light aromatic naphtha		64742956	1-10	100 ppm	n/e	n/e
1,2,4-Trimethylbenzene		95636	1-5	25 ppm	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: viscous liquid with little odor.

**WARNING! Flammable. Keep away from heat, sparks, open flame. Severe eye irritant. May cause skin irritation. Overexposure may cause respiratory tract, mucous membrane irritation. Potential skin sensitizer. Can cause CNS effects (evidenced by dizziness, headache, nausea and vomiting). Avoid skin and eye contact. Wash thoroughly after handling. Avoid breathing vapor. Use with adequate ventilation. Keep container closed when not in use.**

#### 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, defatting).

##### **Eyes:**

Moderate irritant. Contact at elevated temperatures can cause thermal burns. High vapor concentrations may also be irritating.

##### **Inhalation:**

Vapors may irritate nose, throat, and respiratory tract. High vapor concentrations may cause central nervous system (CNS) depression (headache, nausea, giddiness, dizziness).

##### **Ingestion:**

May cause gastric distress and aspiration (evidenced by coughing). May cause CNS depression.

##### *Effects of chronic overexposure:*

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

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

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

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

**International Agency for Research on Cancer:** Yes

**Cancer-suspect constituent(s):** Respirable Carbon Black

##### **Other effects:**

Xylene: near fatal exposures may result in congestive effects to a wide variety of organs. Also see section 11.

### 4. FIRST AID MEASURES

#### **First aid for eyes:**

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

#### **First aid for skin:**

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

**First aid for inhalation:**

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

**First aid for ingestion:**

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

**Note to physician:**

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

**5. FIRE FIGHTING MEASURES****Extinguishing media:** Water Carbon dioxide Dry chemical Foam Alcohol foam**Flash Point (°F):** 100**Method:** PMCC**Explosive limits in air -- Lower:** 1**Upper:** 7 (xylene)**Special firefighting procedures:**

Firefighters should wear self-contained breathing apparatus to avoid inhalation of smoke or vapors. Water may be used to cool exposed containers.

**Unusual fire and explosion hazards:**

Contains combustible solvent. Do not use in area where sparks or open flames are present.

**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.

**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 non-combustible 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 (RCRA hazardous waste).

**Special procedures:**

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

**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. Use bonding/grounding straps when transferring liquid.

**Storage precautions:**

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

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

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

**Other engineering controls:**

Have emergency shower and eye wash available.

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

Safety glasses with side shields.

**Skin Protection:**

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

**Respiratory protection:**

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

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Specific gravity:</b>	1.1-1.9	<b>Boiling point (°F):</b>	n/d
<b>Melting point (°F):</b>	n/d	<b>Vapor density (air = 1):</b>	>1
<b>Vapor pressure (mmHg):</b>	n/d	at 0 °F	<b>Evaporation rate (butyl acetate = 1):</b> n/d
<b>VOC (grams/liter):</b>	n/d	<b>Solubility in water:</b>	Negligible
<b>Percent volatile by volume:</b>	<50	<b>pH (5% solution or slurry in water):</b>	neutral
<b>Percent solids by weight:</b>	>50		0

**10. STABILITY AND REACTIVITY**

This product is chemically stable.

Hazardous polymerization will not occur.

**Conditions to avoid:**

Open flame, sparks 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): n/d

No data available.

**Acute dermal effects**

LD50 (rabbit): n/d

**Acute inhalation effects:**

LC50 (rat): n/d in 8 hours

**Eye irritation:**

No data available.

**Subchronic effects**

No data 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." Laboratory animals exposed to xylene have shown hearing loss, and effects to liver, kidneys, lungs, spleen heart, blood and adrenals.

**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. Developmental toxicity studies with xylene have shown embryolethal/toxic and teratogenic effects with maternal toxicity.

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

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat, 4 hours)
Propylene glycol monomethyl ether	5660 mg/kg	13000 mg/kg	n/d
Xylene	4300 mg/kg	>3160 mg/kg	5000 ppm
Carbon black	n/d	n/d	n/d
Polymers of epoxy resin and bisphenol A	11.4 g/kg	n/d	> 11,000 ppm
Bisphenol A diglycidyl ether resin	30 g/kg	>20 ml/kg	no deaths
Light aromatic naphtha	n/d	n/d	n/d
1,2,4-Trimethylbenzene	5 g/kg	n/d	18 g/m3

**12. ECOLOGICAL INFORMATION****Ecotoxicity:**

No data available.

**Mobility and persistence:**

No data available.

**Environmental fate:**

No data available.

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

Do not dispose of in a landfill. Incineration is the preferred method of disposal. Dispose of in accordance with all applicable local, state and federal disposal regulations.

**14. TRANSPORT INFORMATION****Proper shipping name:** RESIN SOLUTION**Technical name:****Hazard class:** 3**UN number:** 1866**Packing group:** III**IMDG Page no.:****Emergency Response Guide no.:** 127**Other:** Domestic Ground: Non-regulated material**15. REGULATORY INFORMATION****U.S. Federal Regulations****TSCA:**

All ingredients of this product are listed, or are exempt from listing, on the TSCA Inventory.  
Export notification is required under TSCA Section 12B -- see below.

**The following RCRA code(s) applies to this material if it becomes waste:** D001**Regulatory status of hazardous chemical constituents of this product:**

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Propylene glycol monomethyl ether	No	No	No	Not required
Xylene	No	Yes	No	Not required
Carbon black	No	No	No	Not required
Polymers of epoxy resin and bisphenol A	No	No	No	Not required
Bisphenol A diglycidyl ether resin	No	No	No	Required
Light aromatic naphtha	No	No	No	Not required
1,2,4-Trimethylbenzene	No	Yes	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 Fire hazard

**Canadian regulations****WHMIS hazard class(es):** D2B; B3; D2A

**16. OTHER INFORMATION**

<b>Hazardous Materials Information System (HMIS) ratings:</b>		
<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>
<b>2*</b>	<b>3</b>	<b>1</b>

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