

PHILLYBOND ORANGE STERNTUBE MASTIC HARDENER

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

3280U

Last revised: 08/14/02

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** PHILLYBOND ORANGE STERNTUBE MASTIC HARDENER**General use:** This information pertains to the hardener side of a 2- part epoxy.**Chemical family:** EPOXY HARDENER (AMINES)**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	5-25	n/e	n/e	10 ppm (AIHA)
Meta-Xylenediamine	MXDA	1477550	1-10	0.1 mg/m3 (C)	0.1 mg/m3 (C)	0.1 mg/m3 (C) (NIOSH)
Trimethylhexanediamine		3236531	1-20	n/e	n/e	n/e
4-Nonyl-phenol	NPHOH	84852153	1-20	n/e	n/e	n/e
P-tertiarybutylphenol		98544	1-10	n/e	n/e	0.5 mg/m3 (DFG MAK)
Cycloaliphatic amine		*	1-15	n/e	n/e	n/e
Epoxy curing agent		*	40-70	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 ammonia odor.

DANGER! Corrosive. Eye, skin and respiratory irritant. Toxic by skin absorption. May cause skin sensitization. May injure lung.
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Potential health effects

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

Symptoms of acute overexposure:

Skin: Corrosive, severe skin irritant. May cause skin sensitization (rashes, hives).

Eyes: Corrosive. May cause severe damage including blindness. Vapors may be irritating (lacrimation, conjunctivitis, corneal edema).

Inhalation:

Vapors/mists may be corrosive to upper respiratory tract. Toxic if inhaled. Repeated or prolonged exposure can cause lung damage (shortness of breath, chronic cough). May cause respiratory tract sensitization (wheezing with shortness of breath, chronic cough).

Ingestion:

Corrosive. May cause severe and permanent damage to mouth, throat, and stomach (bleeding, vomiting of blood).

Effects of chronic overexposure:

Repeated or prolonged exposure may cause conjunctivitis or corneal damage, adverse skin effects (sensitization, rash, irritation), or respiratory effects (cough, shortness of breath, tightness of chest, sensitization).

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer:No

Medical conditions which may be aggravated by exposure:

Preexisting eye, skin and respiratory disorders. May increase chance of developing symptoms from preexisting skin or respiratory tract allergies.

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

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Rinse continuously with water while on way to get medical attention.

First aid for skin:

Remove contaminated clothing and contaminant. Wash with soap and water. Do NOT apply grease or ointments. Get medical attention.

First aid for inhalation:

Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Prevent aspiration of vomit. Get medical attention.

First aid for ingestion:

Do NOT induce vomiting. Give 1 glass of water unless victim is drowsy, convulsing, or unconscious. Get medical attention.

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

Combustible liquid class IIIB

Extinguishing media:

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): > 200 **Method:** estimate

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

Special firefighting procedures:

Do not enter confined fire space without full bunker gear (butyl rubber), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water. Water or fog may cause frothing which can be violent.

Unusual fire and explosion hazards:

Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after exposure.

Hazardous products of combustion:

Carbon monoxide, nitrogen oxides and nitrogen containing organic compounds.

6. ACCIDENTAL RELEASE MEASURES

Spill control:

Prevent all bodily contact. Eliminate ignition sources. Ventilate area. Stop leak if safe to do so.

Containment:

Dike and contain with absorbent such as clay, sand or other suitable material.

Cleanup:

Large spill: vacuum or pump to storage or salvage vessel. Soak up residue with an absorbent. Flush with water. Dispose of absorbent and flushed solutions appropriately. Small spill: take up with absorbent and place on tightly sealed container for proper disposal.

Special procedures:

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

7. HANDLING AND STORAGE

Handling precautions:

Avoid contact with eyes and skin. Avoid breathing vapors. Wash with soap and water after using and before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.

Storage:

Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.. Do not pressurize drum containers to empty them.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

Ventilation :

Use ventilation as required to control vapor concentrations, local exhaust being the preferred method.

Other engineering controls :

Have eyewash and safety showers available.

Personal protective equipment

Eye and face protection:

Wear splash-proof goggles or face shield.

Skin protection:

Wear chemical-resistant protective clothing such as gloves, apron, overshoes.

Respiratory protection:

If exposure may or does exceed occupational exposure limits, use a NIOSH approved respirator for organic vapors in accord with 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	n/d	Boiling point (°F):	n/d
Melting point (°F):	n/d	Vapor density (air = 1):	> 1
Vapor pressure (mmHg):	n/d 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):	alkaline
Percent solids by weight:	n/d		

10. STABILITY AND REACTIVITY

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

Conditions to avoid :

Heat and open flame.

Incompatible materials:

Strong oxidizing agents and acids.

Hazardous products of decomposition:

Nitrogen oxides, carbon oxides, ammonia, hydrogen cyanide, & other unidentified organic compounds (nitriles, cyanic acid, isocyanates, cyanogens, amides, carbamates).

Conditions under which hazardous polymerization may occur:

Heating in the presence of air may produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): n/d

Not available.

Acute dermal effects: LD50 (rabbit): n/d

Not available.

Acute inhalation effects: LC50 (rat): n/d

Not available.

Exposure: hours.

Eye irritation:

Not available.

Subchronic effects:

Not available.

Carcinogenicity, teratogenicity, and mutagenicity:

Not available.

Other chronic effects:

Mixed polycycloaliphatic amines was tested in rats for systemic effects in a subchronic 28-day oral study at doses ranging from 15-300 mg/kg/day. Effects seen at 300 mg/kg/day included decreased survival, decreased body weight gain, increased liver, kidney and adrenal weights and histological changes in the liver, kidney adrenals and spleen.

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
Meta-Xylenediamine	930 mg/kg	2000 mg/kg	350 ppm
Trimethylhexanediamine	1750 mg/kg	n/d	n/d
4-Nonyl-phenol	n/d	n/d	>1 mg/L
P-tertiarybutylphenol	3250 uL/kg	2520 uL/kg	> 5600 mg/m3
Cycloaliphatic amine	n/d	n/d	n/d
Epoxy curing agent	n/d	n/d	n/d

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

Not available.

Mobility and persistence:

Not available.

Environmental fate:

Not available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

Proper shipping name: Amines, liquid, corrosive, n.o.s.
Technical name : BENZENE-1,3-DIMETHANEAMINE & TRIMETHYLHEXAMETHYLENEDIAMINE
Hazard class : 8
UN number: 2735
Packing group: II
Emergency Response Guide no.: 153
IMDG page number: N/A
Other: Marine Pollutant (Nonylphenol)

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
Meta-Xylenediamine	No	No	0.0	Not required
Trimethylhexanediamine	No	No	0.0	Not required
4-Nonyl-phenol	No	No	0.0	Required
P-tertiarybutylphenol	No	No	0.0	Not required
Cycloaliphatic amine	No	No	0.0	Not required
Epoxy curing agent	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 -

Canadian regulations

WHMIS hazard class(es) : E; D2B

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health 3*	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.

PHILLYBOND ORANGE STERNTUBE MASTIC

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

3280U

Last revised: 07/11/01

Printed: 3/13/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** PHILLYBOND ORANGE STERNTUBE MASTIC**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
Phenol, polymer with formaldehyde, glycidyl ether		28064144	10-40	n/e	n/e	n/e
Epoxy - CTBN Adduct		68610731	10-40	n/e	n/e	n/e
Cyclic Ester		TRADE SECRET	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: viscous liquid with little odor.

WARNING! Eye and skin irritant. Potential skin sensitizer.**Potential health effects****Primary routes of exposure:** Skin contact Skin absorption Eye contact Inhalation Ingestion**Symptoms of acute overexposure:****Skin:** Moderate irritant. Contact at elevated temperatures can cause thermal burns. May cause skin sensitization (rashes, hives).**Eyes:** Moderate to severe irritant. Contact at elevated temperatures can cause thermal burns.

Inhalation:

The low vapor pressure of the resin makes inhalation unlikely in normal use.

Ingestion:

Ingestion of this material may cause altered mental status, coma, respiratory depression, bradycardia, hypotension, transient metabolic acidosis, mild hypothermia and agitation.

Effects of chronic overexposure:

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

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer: No

Cancer-suspect constituent(s) : None

Medical conditions which may be aggravated by exposure:

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

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.

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

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): 300

Method: SFCC

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:

Heat may rupture closed containers. Vapors are heavier than air and may travel along floor to an ignition source. Product may float on water.

Hazardous products of combustion:

When heated to decomposition it emits carbon monoxide and other fumes and vapors varying in composition and toxicity.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Avoid personal contact. Eliminate ignition sources. Ventilate area.

Containment:

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

Cleanup:

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

Special procedures:

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

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

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

Storage:

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

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

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

Other engineering controls :

Have emergency shower and eye wash available.

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

Safety glasses with side shields or splash goggles.

Skin protection:

Do NOT allow skin contact. 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:	1.0-1.3	Boiling point (°F):	>300
Melting point (°F):	n/d	Vapor density (air = 1):	>1
Vapor pressure (mmHg):	n/d at 171 °F	Evaporation rate (butyl acetate = 1):	<<1
VOC (grams/liter):	0	Solubility in water:	Negligible
Percent volatile by volume:	0	pH (5% solution or slurry in water):	neutral
Percent solids by weight:	100		

10. STABILITY AND REACTIVITY

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

Conditions to avoid :

Open flame and extreme heat, oxidizing conditions.

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, phenolics and other organic substances may be formed during combustion or elevated temperature degradation.

Conditions under which hazardous polymerization may occur:

Will autopolymerize at very high temperatures.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): n/d

Changes in neurotransmitter levels has been reported in experimental animals dosed orally or by injection with "cyclic ester" component.

Acute dermal effects: LD50 (rabbit): n/d

Acute inhalation effects: LC50 (rat): n/d

Exposure: 8 hours.

Eye irritation:

No data available.

Subchronic effects:

No data available.

Carcinogenicity, teratogenicity, and mutagenicity:

No data available.

Other chronic effects:

No data available.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Phenol, polymer with formaldehyde, glycidyl ether	> 5000 mg/kg	> 6000 mg/kg	> 1.7 mg/L
Epoxy - CTBN Adduct	n/d	n/d	n/d
Cyclic Ester	> 1000 mg/kg	n/d	> 2.5 g/m3

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

No data available.

Mobility and persistence:

No data available.

Environmental fate:

No data available.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

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

14. TRANSPORT INFORMATION

Proper shipping name: Non-regulated

Technical name :

Hazard class : N/A

UN number:

Packing group:

Emergency Response Guide no.:

IMDG page number: N/A

Other:

15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA

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

The following RCRA code(s) applies to this material if it becomes waste:

None

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Phenol, polymer with formaldehyde, glycidyl ether	No	No	0.0	Not required
Epoxy - CTBN Adduct	No	No	0.0	Not required
Cyclic Ester	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

16. OTHER INFORMATION

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

Revisions for this issue:

MSDS section	Revisions
3	Updated health data.

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.