

## Section 1. Identification

**Product Name:** EPN-481  
**Supplier:** CSNRI | 621 Lockhaven Drive. Houston, TX 77073 | +1 281.590.8491  
**Emergency Phone Number:** 800.424.9300 (CHEMTREC)  
 +1 703.741.5970 (Outside the US)  
**Product Description:** Putty resin  
**Product Use:** Reinforcement for pipe repair

## Section 2. Hazard Identification

### Classification of the substance or mixture

Acute toxicity, oral – Category 4  
 Acute toxicity, inhalation – Category 4  
 Sensitization / Skin – Category 1  
 Skin Irritation – Category 2  
 Specific Target Organ Toxicity (Single Exposure) – Category 3  
 Carcinogenicity – Category 2  
 Toxic to reproduction – Category 2  
 Specific Target Organ Toxicity (Repeated Exposure) – Category 2  
 Hazardous to the aquatic environment (Acute) – Category 1  
 Hazardous to the Aquatic Environment (Chronic) – Category 1

### Hazard pictograms:



**Signal word:** Danger

### Hazard statements:

H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction  
 H332 Harmful if inhaled.  
 H335 May cause respiratory irritation.  
 H351 Suspected of causing cancer  
 H361 Suspected of damaging fertility or the unborn child.  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects

### Precautionary statements:

P260 Do not breathe breathing dust/fume/gas/mist/vapours/spray.  
 P264 Wash hands thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves, clothing, and eye/face protection.  
 P301+P330 +P312 IF SWALLOWED: Rinse mouth. POISON CENTER or doctor/physician if you feel unwell.



P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

P391 Collect spillage.

P403+P233 Store in well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents and containers in accordance with local, regional and international regulations.

Other hazards: N/A

### Section 3. Composition/ Information on Ingredients

Substances: Not applicable

Mixture:

Component	CAS #	% Composition
Barium sulfate	7727-43-7	20 – 50
Polyphenol Cyanate Resin	87397-54-4	20 – 30
Glass oxide	65997-17-3	10 – 20
4,4'-Ethylidenediphenyl Dicyanate	47073-92-7	5 – 10
4,4'-Bis(o-propenyl-phenoxy)-benzophenone	109423-33-8	0.3 – 3.4
Nonylphenol	84852-15-3	0.2 – 0.3

### Section 4. First Aid Measures

#### Description of first-aid measures:

**Inhalation:** If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

**Skin:** Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water

until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Consult a physician.

**Eyes:** Immediately flush eyes with plenty of clean water for an extended time, for at least fifteen (15) minutes. Remove contact lenses, if present and easy to do. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Get medical attention immediately.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water and drink afterwards plenty of water. Get medical attention immediately.

**Most important symptoms and effects, both acute and delayed:** Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. Persons with sensitive airways (e.g., asthmatics) may react to vapors. See section 11 for additional information.

**Indication of any immediate medical attention and special treatment needed, if necessary:** Treat symptomatically.

### Section 5. Fire Fighting Measures



**Suitable extinguishing media:** Use water spray, foam, dry chemical or carbon dioxide.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:**

**Unusual fire & explosion hazards:** Heating or fire can release toxic gas. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

**Hazardous combustion products:** Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous decomposition products for additional information.

**Special protective actions for fire-fighters:** Wear self-contained breathing apparatus (SCBA) equipped with a full-face piece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations. See section 9 for additional information.

#### Section 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Keep unnecessary personnel away from spill/leak. See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

**Environmental precautions:** Do not flush product into public sewer, water systems or surface waters.

**Methods and materials for containment and cleaning up:** Stop leak if without risk. Move containers from spill area. Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and laundry before reuse.

#### Section 7. Handling and Storage

**Precautions for safe handling:** As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Use under well-ventilated conditions. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid drinking, tasting, swallowing or ingesting this product. Wash contaminated clothing before reuse. Discard shoes contaminated with this product.

**Conditions for safe storage, including any incompatibilities:** Keep away from heat, sparks and open flames. Do not store in direct sunlight. For ideal shelf life, store at 2-8°C in a dry, well-ventilated place. It can be stored at ambient temperatures (75 °F) for a maximum of 6 months without compromising the properties of the material. Do not expose to temperatures above 110 °F. These installation instructions are intended as a guide for standard products. Consult your representative for specific projects or unique applications. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container tightly closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning.

#### Section 8. Exposure Controls / Personal Protection

**Control parameters:** No information available

**Appropriate engineering controls:** Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation.

Ventilation must be adequate to maintain air concentrations below occupational exposure standards. When necessary use mechanical handling to reduce human contact with materials.

**Individual protection measures:**

**Eye protection:** Full face shield with safety glasses or tightly fitting splash-proof chemical goggles.

**Skin and body protection:** Wear chemical resistant (impervious) gloves; PVC, neoprene, nitrile rubber, EVAL, butyl rubber. Wear chemical resistant protective clothing. Use good laboratory/ workplace procedures including personal protective clothing: lab coat and protective gloves.

**Respiratory protection:** Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever when performing operations involving potential exposure to aerosol, mist, spray, fume or vapor of the product.

**Hand protection:** Wear gloves. Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of gloves are dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, and dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

**Other information:** Eyewash fountains and safety showers are recommended in the work area.

**Section 9. Physical and Chemical Properties**

<b>Physical state:</b>	Putty
<b>Color:</b>	Beige
<b>Odor:</b>	Mild
<b>Odor threshold:</b>	No data available
<b>Melting point:</b>	No data available
<b>Freezing point:</b>	No data available
<b>Boiling point:</b>	No data available
<b>Flammability (solid, gas):</b>	Not applicable
<b>Flash point:</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>pH:</b>	No data available
<b>Viscosity, kinematic:</b>	No data available
<b>Viscosity:</b>	96,000, cP (at 50 °C / 122 °F)
<b>Solubility:</b>	Negligible
<b>Vapor pressure:</b>	No data available
<b>Relative Density:</b>	1.31 g/cm <sup>3</sup> (Density Cup Method)
<b>Relative vapor density:</b>	Heavier than air
<b>Relative evaporation rate (butyl acetate=1):</b>	No data available
<b>Explosive properties:</b>	No data available
<b>Oxidizing properties:</b>	No data available
<b>Explosive limits:</b>	No data available

**Section 10. Stability and Reactivity**

**Reactivity:** No reactive under normal conditions.

**Chemical stability:** This product is stable under normal conditions.

**Possibility of hazardous reactions:** For uncured material, exothermic reactions including polymerization may occur in contact with strong acids, strong bases, alkalis, amines, water, transitional metal compounds and excessive heat.

**Conditions to avoid:** Incompatible materials.



**Incompatible materials:** Strong acids, strong bases, alkalis, amines, water and transitional metal compounds for uncured material.

**Hazardous decomposition products:** Thermal decomposition may produce smoke, carbon monoxide, carbon dioxide, aldehydes, oxides of nitrogen, phenol and other products of incomplete combustion.

## Section 11. Toxicological Information

**Information on the likely routes of exposure:** Eyes, skin, inhalation and ingestion.

**Symptoms related to the physical, chemical and toxicological characteristics:**

**Eyes:** Causes serious eye damage.

**Skin:** Causes skin irritation. May cause an allergic skin reaction. Harmful if absorbed through skin. Repeated or prolonged contact may cause skin irritation and dermatitis.

**Inhalation:** Harmful if inhaled. May cause respiratory irritation.

**Ingestion:** Harmful if swallowed.

### Acute Toxicity:

Component	LD <sub>50</sub> Oral (rat)	LD <sub>50</sub> Dermal (rabbit)
Polyphenol Cyanate Resin	>2,000 mg/kg	>2,000 mg/kg
4,4'-Ethylidenediphenyl Dicyanate	500-1,000, mg/kg	N/A
Nonylphenol	1,300 mg/kg	N/A
Silica oxide	2,000 – 5,000 mg/kg	>5,000 mg/kg

**Delayed and immediate effects and chronic effects from short- and long-term exposure:** Further information is not available.

**Chronic Toxicity:**

**Germ cell mutagenicity:** Information is not available.

**Carcinogenicity:**

#### US. National Toxicology Program (NTP) Report on Carcinogens

Silica Oxide (CAS 65997-17-3) Reasonably Anticipated to be a Human Carcinogen.

**Reproductive toxicity:**

Nonylphenol – Reproductive toxicity – Category 2

**STOT - Single exposure:** Specific Target Organ Toxicity, Single Exposure – Category 3. May cause respiratory irritation.

**STOT- Repeated exposure:** Specific Target Organ Toxicity, Repeated Exposure – Category 2. May cause damage to organs.

**Aspiration hazard:** Information is not available.

**Other information:** None

## Section 12. Ecological Information

### Toxicity:

Component	Test	Species	Result
Polyphenol Cyanate Resin	LC50 (96 hrs)	Rainbow Trout	0.76 mg/L
	EC50 (48 hrs)	Daphnia magna	15.5 mg/L
	EC50 (3 hrs)	Activated sludge	>100 mg/L
4,4'-Ethylidenediphenyl Dicyanate	EC50 (48 hrs)	Daphnia magna	1.911 mg/L
	EbC50 (72 hrs)	Algae	0.65 mg/L
	ErC50 (72 hrs)	Algae	>1.10 mg/L est.
Nonylphenol	NOEC (96 hrs)	Fathead Minnow	0.083 mg/L
	LOEC (96 hrs)	Lepomis	0.211 mg/L
	LC50 (96 hrs)	Macrochirus	0.135mg/L

**Persistence and degradability:**

Component	Test	Period	Result
Polyphenol Cyanate Resin	OECD 301B	28 days	Ca. 10%
4,4'-Ethylidenediphenyl Dicyanate	OECD 301D	28 days	15%

**Bioaccumulative potential:** No additional information available.

**Mobility in soil:** No additional information available.

**Other adverse effects:** No additional information available.

### Section 13. Disposal Considerations

**Waste treatment methods:** Under RCRA it is the responsibility of the user of the product to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws. Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse. Avoid release to the environment. Do not flush to sewer, watershed, or waterway.

### Section 14. Transport Information

**DOT / TDG / ADR / RID / IMDG / IATA / ICAO:**

**U.N. number:** UN 3082.  
**Proper Shipping Name:** Environmentally hazardous substance, liquid, n.o.s. (Polyphenol Cyanate Resin)  
**Hazard class:** Class 9  
**Packing group:** III  
**Environmental hazards:** Yes

### Section 15. Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV – List of substances subject to authorization, Substances of very high concern: None of the components are listed.

Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Nonylphenol (CAS 84852-15-3)

**OTHER REGULATIONS:** Additional information is not available

### Section 16. Other Information

**Abbreviations and acronyms used:**

CAS: Chemical Abstracts Service  
 DOT: Department of Transportation  
 GHS: Globally Harmonized System  
 IATA: International Air Transport Association  
 ICAO: International Civil Aviation Organization  
 IMDG: International Maritime Dangerous Goods  
 OSHA: Occupational Safety and Health Administration  
 PVC: Polyvinyl Chloride



RCRA: Resource Conservation and Recovery Act

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