

## Section 1. Identification

**Product Name:** CS-105 Part B  
**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:** Hardener solution for epoxy resin  
**Product Use:** Intended to repair pipes

## Section 2. Hazards Identification

### Classification of the substance or mixture

Acute toxicity / oral – Category 4  
 Acute toxicity / dermal – Category 4  
 Acute toxicity / inhalation – Category 4  
 Skin corrosion / irritation – Category 1B  
 Sensitization / skin – Category 1B  
 Eye damage / irritation – Category 1  
 Hazardous to the aquatic environment (Acute) Hazard – Category 1  
 Hazardous to the aquatic environment (Chronic) Hazard – Category 1

### Hazard pictograms:



**Signal word:** Danger

### Hazard statements:

H302 Harmful if swallowed.  
 H312 Harmful in contact with skin  
 H314 Causes severe skin burns and eye damage.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage  
 H332 Harmful if inhaled.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.

### Precautionary statements:

P264 Wash hands and skin thoroughly after handling.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P337 + P313 If eye irritation persists: Get medical advice/attention.  
 P363 Wash contaminated clothing before reuse.

P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

**Other hazards:**

Warning. May be a health hazard in confined spaces.

### Section 3. Composition/Information on Ingredients

**Mixture:**

| Component  | CAS #       | % by Weight |
|--|-------------|-------------|
| Polyoxypropylenediamine  | 9046-10-0   | 10 - 30     |
| 1,3-Phenylenebismethylamine  | 1477-55-0   | 10 - 30     |
| Triethylenetetramine   | 112-24-3    | 10 - 30     |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with m-phenylenebis(methylamine) | 113930-69-1 | 10 - 30     |
| Phenol, 4,4'-(1-methylethylidene) bis-, polymer with N,N'-bis(2-aminoethyl)-1,2-ethanediamine and (chloromethyl)oxirane                      | 38294-69-8  | 10 - 30     |

### Section 4. First Aid Measures

**First Aid Measures for Accidental:**

**Inhalation:** Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Remove source of exposure or move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor. Immediately call a Poison Centre or doctor.

**Skin contact:** Avoid direct contact. Wear chemical protective clothing if necessary. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation occurs get medical advice/attention.

**Eye contact:** Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice/attention.

**Ingestion:** Rinse mouth with water. Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Get medical advice/attention if you feel unwell or are concerned.

**Most important symptoms and effects, both acute and delayed:** If on skin: may cause moderate to severe irritation. If in eyes: may cause moderate to severe irritation. May be harmful if swallowed; may cause sensitization by skin contact.

**Immediate medical attention and special treatment:**

**Target organs:** Lungs, respiratory system, skin.

**Medical conditions aggravated by exposure:** None known.

### Section 5. Fire-fighting Measures

**Suitable extinguishing media:** Use water to keep non-leaking, fire-exposed containers cool.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** Heating increases the release of toxic vapor.

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; corrosive, oxidizing nitrogen oxides.



**Special protective equipment and precautions for firefighters:** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA). A full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary.

#### Section 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

**Environmental precautions:** Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

**Methods and material for containment and cleaning up:** Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Large spills or leaks: dike spilled product to prevent runoff. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

#### Section 7. Handling and Storage

**Precautions for safe handling:** Do not breathe in this product. Prevent all skin contact. Do not get in eyes. Only use where there is adequate ventilation. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). If product is transferred to another container, ensure new container is suitable for the product. Wear personal protective equipment to avoid direct contact with this chemical. Do NOT eat, drink or store food in work areas. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area. Wash hands thoroughly after handling this material.

**Conditions for safe storage:** Store in an area that is: ventilated. Store in corrosive resistant container with a resistant inner liner. Empty containers may contain hazardous residue. Store separately. Keep closed. Follow all precautions given on this safety data sheet Comply with all applicable health and safety regulations, fire and building codes.

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

| Component                   | OSHA PEL                   | AIHA WEEL  |
|-----------------------------|----------------------------|------------|
|                             | Ceiling                    | 8 hr. TWA  |
| 1,3-Phenylenebismethylamine | 0.1 mg/m <sup>3</sup> Skin | -          |
| Triethylenetetramine        | -                          | 1 ppm skin |

**Appropriate Engineering Controls:** In a confined space: general ventilation is usually adequate. For large scale use of this product: do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Provide eyewash and safety shower if contact or splash hazard exists.

#### Personal Protective Equipment:

**Eye/face protection:** Wear chemical safety goggles.

**Skin protection:** Wear chemical protective clothing e.g. gloves, aprons, boots. Butyl rubber, neoprene rubber, nitrile rubber.



**Respiratory protection:** Wear a NIOSH approved air-purifying respirator with an organic vapor cartridge if using in an unventilated area.

### Section 9. Physical and Chemical Properties

|   |                                     |
|---|-------------------------------------|
| <b>Physical Appearance:</b>                     | Colourless liquid                   |
| <b>Odor:</b>                                    | Ammonia-like                        |
| <b>pH:</b>                                      | >10                                 |
| <b>Flash Point:</b>                             | 122 °C (252 °F)                     |
| <b>Melting Point Range:</b>                     | No data available                   |
| <b>Boiling point:</b>                           | No data available                   |
| <b>Evaporation rate (ether=1):</b>              | No data available                   |
| <b>Flammability (solid, gas):</b>               | No data available                   |
| <b>Specific Gravity:</b>                        | No data available                   |
| <b>Viscosity:</b>                               | No data available                   |
| <b>Water Solubility:</b>                        | Soluble (more than 10-50%) in water |
| <b>Solubility in other solvents:</b>            | No data available                   |
| <b>Vapor Pressure:</b>                          | No data available                   |
| <b>Vapor density (Air=1)</b>                    | No data available                   |
| <b>Relative Density:</b>                        | 0.92 (estimated)                    |
| <b>Partition coefficient (n-octanol/water):</b> | No data available                   |
| <b>Auto-ignition Temperature:</b>               | No data available                   |
| <b>Decomposition Temperature:</b>               | No data available                   |
| <b>Explosive Properties:</b>                    | No data available                   |
| <b>Oxidizing Properties:</b>                    | No data available                   |
| <b>VOC Content (%):</b>                         | No data available                   |
| <b>Flammability Limits in Air:</b>              | No data available                   |

### Section 10. Stability and Reactivity

**Reactivity:** Not reactive under normal conditions of use.

**Chemical stability:** Normally stable.

**Possibility of hazardous reactions:** None expected under normal conditions of storage and use.

**Conditions to avoid:** Open flames, sparks, static discharge, heat and other ignition sources.

**Incompatible materials:** Strong acids (e.g. hydrochloric acid), strong oxidizing agents (e.g. perchloric acid).

**Hazardous decomposition products:** Ammonia.

### Section 11. Toxicological Information

**Toxicity:** Severely irritating to the respiratory system harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage. May cause burns to mouth, throat and stomach. Corrosive to the skin. Causes burns. Corrosive to the eyes. Causes burns.

**Likely routes of exposure:** Inhalation; skin contact; eye contact.

**Acute Toxicity:**

| Component               | LD50 (oral)      | LD50 (dermal)                |
|-------------------------|------------------|------------------------------|
| Polyoxypropylenediamine | 2885 mg/kg (rat) | 2980 mg/m <sup>3</sup> (rat) |

|                             |                    |                       |
|-----------------------------|--------------------|-----------------------|
| 1,3-Phenylenebismethylamine | ~ 930 mg/kg (rat)  | ~ 2000 mg/kg (rabbit) |
| Triethylenetetramine        | ~ 2500 mg/kg (rat) | ~ 550 mg/kg (rabbit)  |

**Skin corrosion/irritation:** Animal tests show moderate or severe irritation.

**Serious eye damage/irritation:** Causes serious eye irritation based on skin irritation information.

**STOT - single exposure:**

**Inhalation:** Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

**Skin absorption:** Corrosive to skin. Causes burns. May cause sensitization by skin contact.

**Ingestion:** Harmful if swallowed. May cause burns to mouth throat and stomach.

**Aspiration hazard:** Can cause lung damage if aspirated based on human experience.

**STOT - repeated exposure:** Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Respiratory and/or sensitization:** In sensitized people, exposure to a very small amount of product can cause symptoms including wheezing, difficult breathing, sneezing and runny or blocked nose. Can cause death. Symptoms can develop immediately following exposure or hours later. Repeated exposure will make the reaction worse.

**Carcinogenicity:** Not known to cause cancer. Key to Abbreviations: A5 = Not suspected as a human carcinogen.

**Reproductive toxicity:**

**Development of offspring:** Not known to harm the unborn child.

**Sexual function and fertility:** Not known to cause effects on sexual function or fertility.

**Effects on or via lactation:** Not known to cause effects on or via lactation.

**Germ cell mutagenicity:** Not known to be a mutagen.

**Interactive effects:** No information was located.

## Section 12. Ecological Information

**Ecotoxicity Effects:** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Not readily biodegradable. This product shows a low bioaccumulation potential.

**Acute aquatic toxicity:**

| Component                     | LC50 Fish            |
|-------------------------------|----------------------|
| Polyoxypropylenediamine       | > 220 mg/L (96-hour) |
| 1, 3- Phenylenebismethylamine | ~ 130 mg/L           |

**Persistence and degradability:** Does not degrade rapidly based on quantitative tests.

**Bioaccumulative potential:** This product and its degradation products not expected to bioaccumulate based on the n-octanol/water partition coefficient (Log Kow).

## Section 13. Disposal Considerations

**Waste disposal method:** This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground.

## Section 14. Transport Information

**DOT****UN-Number:** UN2735**Proper Shipping Name:** Polyamine, liquid, corrosive, n.o.s. (Alkyl Polyamine)**Hazard Class:** 8**Packing Group:** III**IMO (Marine)****UN-Number:** UN2735**Proper Shipping Name:** Polyamine, liquid, corrosive, n.o.s. (Alkyl Polyamine)**Hazard Class:** 8**Packing Group:** III**IATA (Air)****UN-Number:** UN2735**Proper Shipping Name:** Polyamine, liquid, corrosive, n.o.s. (Alkyl Polyamine)**Hazard Class:** 8**Packing Group:** III**TDG (Canada)****UN-Number:** UN2735**Proper Shipping Name:** Polyamine, liquid, corrosive, n.o.s. (Alkyl Polyamine)**Hazard Class:** 8**Packing Group:** III**Special precautions for user:** Not applicable**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:** Not applicable**Section 15. Regulatory Information****Safety, health and environmental regulations****Canada****WHMIS classification:**

Class D2A; D2B    Class E

D2A - Very Toxic (Chronic toxicity); D2B - Toxic (Skin irritant; Eye irritant; Skin sensitization); E – Corrosive: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

**Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL):** All ingredients are listed on the DSL or are not required to be listed

**USA**

**Toxic Substances Control Act (TSCA) Section 8(b):** All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

**Section 16. Other Information****NFPA hazard ratings:****Health hazard: 3 Flammability: 1 Reactivity: 0**

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