

Section 1. Product and Company Identification

Product Name: SFE-220 Part B
Contact information for Canada: 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
Product Use: Intended to repair pipes
Chemical Name or Synonym: N/A

Section 2. Hazards Identification

Classification of the substance or mixture:

Acute toxicity / Oral – Category 4
 Acute toxicity / Dermal – Category 4
 Skin corrosion/irritation – Category 1A
 Eye damage/eye irritation – Category 1
 Acute toxicity / Inhalation – Category 4
 STOT (SE) – Category 3
 Chronic Aquatic Toxicity - Category 2

Label Elements:



Signal Word: Danger

Hazard Statements:

H302 Harmful if swallowed
 H312 Harmful in contact with skin
 H314 Causes severe skin burns and eye damage.
 H318 Causes serious eye damage
 H332 Harmful if inhaled
 H335 May cause respiratory irritation
 H411 Toxic to aquatic life with long lasting effects

Precautionary Statement:

P261 Avoid breathing dust/fume/gas/mist.
 P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P301+P312 IF SWALLOWED: Call a Poison Center/doctor if you feel unwell.
 P302+P361+P353 IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P362 - Take off contaminated clothing and wash before reuse



P310 - Immediately call a POISON CENTER or doctor/ physician
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

Section 3. Composition/ Information on Ingredients

| Chemical Name | CAS-No | Weight % |
|--|------------|----------|
| Cyclohex-1,2-ylenediamine | 694-83-7 | 35 – 60 |
| 2-methylpentane-1,5-diamine | 15520-10-2 | 15 – 30 |
| Trimethylpropane polyoxypropylene triamine | 39423-51-3 | 15 – 30 |

Section 4. First Aid Measures

First Aid Measures for Accidental:

Eye Contact: Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Skin Contact: Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Get medical attention immediately. Wash out mouth with water. Move exposed person to fresh air. Do not induce vomiting unless directed to do so by medical personnel. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person.

Inhalation: Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth to mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Most important symptoms/effects, acute and delayed: Corrosive effects. The product causes burns of eyes, skin and mucous membranes. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed: Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours. If evacuation of stomach contents is necessary, use method least likely to cause aspiration. This material, if aspirated into the lungs, may cause chemical pneumonitis.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media: Water spray. Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO₂).

Unsuitable Extinguishing Media: No information available.



Special Protective Equipment and Precautions for Fire-fighters: As in any fire, wear self-contained breathing apparatus and full protective gear.

Specific Hazards Arising from the Chemical (Under Fire Conditions): May cause sensitization by skin contact. Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides and nitrogen oxides.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Avoid contact with skin, eyes and clothing. Use personal protective equipment. Evacuate personnel to safe areas.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

Methods and Materials for Containment and Cleaning Up: Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Reference to other sections: See Section 12 for additional information.

Section 7. Handling and Storage

Precautions for safe handling: Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not take internally.

Conditions for safe storage including any incompatibilities: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

Section 8. Exposure Controls / Personal Protection

Control parameters: Contains no substances with occupational exposure limit values.

Appropriate engineering controls: Ventilation must be adequate for most operations.

Individual protection measures:

Eye / face protection: Wear safety glasses with side shields or chemical splash goggles when exposure is more likely.

Skin protection: Wear liquid-proof, chemical resistant gloves (nitrile-butyl rubber, neoprene, butyl rubber or natural rubber) and full body-covering clothing.

Respiratory protection: In case of inadequate ventilation wear respiratory protection. Use respirators when exposure to vapors from heated material.

Other information: Wash thoroughly after handling. Avoid breathing vapors from heated material. Protective skin cream barriers can be applied to hands in addition to gloves for added protection.

Section 9. Physical and Chemical Properties

| | |
|-----------------------------|-------------------|
| Physical State: | Liquid |
| Appearance: | Light yellow |
| Odor: | Amine |
| pH: | No data available |
| Flash Point: | No data available |
| Melting Point Range: | No data available |



| | |
|---|---------------------------------|
| Boiling point: | No data available |
| Evaporation rate (ether=1): | No data available |
| Flammability (solid, gas): | No data available |
| Specific Gravity: | No data available |
| Viscosity: | 44 cP |
| Water Solubility: | No data available |
| Solubility in other solvents: | No data available |
| Vapor Pressure: | No data available |
| Vapor density (Air=1) | No data available |
| Density: | 0.84 g/cm ³ at 25 °C |
| Partition coefficient (n-octanol/water): | No data available |
| Auto-ignition Temperature: | No data available |
| Decomposition Temperature: | No data available |
| Explosive Properties: | No information available |
| Oxidizing Properties: | No information available |
| VOC Content (%): | No information available |
| Flammability Limits in Air: | No data available |

Section 10. Stability and Reactivity

Reactivity: No data available.

Chemical Stability: Stable under standard normal conditions.

Possibility of Hazardous reactions: None under normal processing.

Conditions to Avoid: Avoid heat, sparks, open flames, ignition sources, air; material is hygroscopic.

Incompatible Materials / Chemicals: Strong oxidizing agents. Strong acids. Acid chlorides. Acid anhydrides.

Hazardous Decomposition Products: Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides. Nitrogen oxides (NO_x).

Section 11. Toxicological Information

Information in the likely route of exposure: Inhalation, ingestion, skin contact, eye contact.

Potential Acute Health Effects:

Eye contact: Causes serious eye damage

Inhalation: Inhalation of vapor is irritating to the respiratory system.

Skin contact: Cause sever skin burns.

Ingestion: Harmful if swallowed. This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possible the digestive tract.

Symptoms related to the physical, chemical and toxicological effects:

Ingestion: Adverse symptoms may include stomach pains.

Inhalation: May cause throat pain and cough.

Skin contact: Symptoms may include redness, edema, drying, defatting and cracking of the skin.

Eye contact: Adverse symptoms may include pain, watering and redness. May cause severe damage including blindness.

**Potential Chronic Health Effects:**

Respiratory Sensitization: No classification due to the lack of data

Germ Cell Mutagenicity: Did not show mutagenic effects in animal experiments.

Carcinogenicity: Not considered to be a carcinogen by OSHA/NTP/IARC/ACGIH.

Reproductive Toxicity: Classification criteria are not met based on available data.

Specific Target Organ Toxicity - single exposure (STOT-se): Respiratory tract irritation.

Specific Target Organ Toxicity - repeated exposure (STOT-re): Classification criteria are not met based on available data

Chronic Effects: Classification criteria are not met based on available data.

Delayed and immediate effects and also chronic effects from short and long term exposure:

Short term exposure: No specific data.

Long term exposure: No specific data

Numerical measures of toxicity**Acute toxicity:**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--|-------------------|----------------------|---------------------|
| Cyclohex-1,2-ylenediamine | 4,556 mg/kg (rat) | - | - |
| 2-methylpentane-1,5-diamine | 1,170 mg/kg (rat) | 1,870 mg/kg (rabbit) | 4.9 mg/l / 1h (rat) |
| Trimethylpropane polyoxypropylene triamine | >550 mg/kg (rat) | >1,000 mg/kg (rat) | - |

Section 12. Ecological Information**Ecotoxicity Effects:**

| Chemical Name | Aquatic Invertebrates EC50 | Toxicity to Fish LC50 | Bacteria EC50 |
|--|----------------------------|------------------------------|---|
| Cyclohex-1,2-ylenediamine | - | Golden orfe, 48-hr: 200 mg/l | - |
| 2-methylpentane-1,5-diamine | Daphnia, 48h: 19.8 mg/L | 1,825 mg/L | Algae, 72h: > 100 mg/L |
| Trimethylpropane polyoxypropylene triamine | Daphnia, 48h: 13 mg/L | Fish: >100 mg/L (96 h) | Bacteria, 30min: 1000 mg/L Algae: 4.4 mg/L |

General Effect: Toxic to aquatic life with long lasting effects.

Persistence and degradability: Not readily biodegradable.

Bioaccumulative potential: No data available.

Mobility in soil: None known

Section 13. Disposal Considerations

Waste treatment methods: Disposal of this product solutions and by-products should at all times comply with the requirements of the environmental protection and waste disposal legislation and any regional local authority requirements.

Uncleaned packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of in accordance to all local, state, national and/or international legislation/regulations.



Section 14. Transport Information

IMDG

Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (Cyclohex-1,2-ylenediamine)
U.N. number: UN 2735.
Hazard class: 8
Packing group: II
EmS number: F-A, S-B
Marine pollutant: Yes

IATA

Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (Cyclohex-1,2-ylenediamine)
UN-Number: UN2735
Hazard Class: 8
Packing Group: II

DOT

Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (Cyclohex-1,2-ylenediamine)
UN-Number: UN2735
Hazard Class: 8
Packing Group: II
Marine pollutant: Yes

Section 15. Regulatory Information

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

US Federal Regulations: All components are on the US EPA TSCA Inventory List or are not required to be listed on the inventory.

SARA Title III Section 311/312 (40CFR370): No reportable components

SARA Title III Section 302): No reportable components

TSCA Inventory Status: Reported/included

Canadian DSL Status: Reported/included

Chemicals Known to the State of California to Cause Cancer or Reproductive Toxicity: None known to be in the product at levels requiring a warning.

Section 16 Other Information

Key Legend Information:

OSHA – Occupational Safety and Health Administration

NIOSH – National Institute for Occupational Safety and Health

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances



AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

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