

SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

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MATERIAL NAME: **PREFERENTIAL SILICON ETCHANT PSE-300F**

REVISED: March 1, 2022

CHEMICAL FAMILY: Basic Amine

Product Number: 060-130S-F

For QT: 160-130S-F

SECTION 2. HEALTH HAZARD INFORMATION

Hazard Statements

H227 Flammable Liquids: Category 4

H290 Corrosive to Metals: Category 1

H300 Acute toxicity Oral : Category 2

H332 Acute toxicity Inhalation : Category 4

H312 Acute toxicity Dermal: Category 4

H314 Skin corrosion / Skin irritation : Category 1B

H318 Serious eye damage / Eye irritation : Category 1

H372 Special target organ systemic toxicity repeated exposure : Category 1

Pictograms or Hazard symbols



Signal Word: Danger

May be corrosive to metals.

Causes severe skin burns and eye damage. Causes serious eye damage.

Harmful in contact with skin. Harmful if inhaled. May cause an allergic skin reaction.

Fatal if swallowed.

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes damage to liver, kidneys, lungs, and nervous system through prolonged or repeated exposure.

Combustible material.

Precautionary Statements

P210 Keep away from heat, flames, and hot surfaces. No smoking.

P280 Wear protective gloves, clothing, and eye and face protection.

P370 + P378 In case of fire use to extinguish.

P403 + P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

P234 Keep only in original container.

P390 Absorb spillage to prevent material damage.

P406 Store in corrosive resistant container.

P264 Wash thoroughly after handling.

P270 Do not eat, drink, or smoke when using this product.

P301 + P310 If swallowed, immediately call a physician.

P330 Rinse mouth.

P405 Store locked up.

P261 Avoid breathing fumes/mist/vapors.

P271 Use only outdoors or in a well-ventilated area.

P304 + P340 If inhaled, remove person to fresh air and keep comfortable for breathing.

P312 Call a physician if you feel unwell.

P302 + P352 If on skin, wash with plenty of water. Remove contact lenses if present and easy to do so. Continue rinsing.

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

P260 Do not breathe fume/gas/mist/vapors.

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.

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.

P363 Wash contaminated clothing before reuse.

P314 Get medical advice/attention if you feel unwell.

Emergency Overview

DANGER! COMBUSTIBLE LIQUID AND VAPOR. VAPOR MAY CAUSE TEMPORARY BLURRING OF VISION. MAY BE HARMFUL. MAY CAUSE SEVERE BURNS OR RESPIRATORY AND DIGESTIVE TRACTS. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. HARMFUL IF ABSORBED THROUGH THE SKIN. CAUSES SEVERE BURNS OF THE EYES AND SKIN.

Potential Health Effects

Inhalation, Skin absorption, Skin contact, eye contact, ingestion

Eye Contact

Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness. Additional symptoms of eye exposure may include: halo vision (blurred vision around bright objects).

Skin Contact

Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damages. Additional symptoms of skin contact may include: allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects). Persons exposed to this material may experience an allergic reaction when exposed to other amines. Passage of this material into the body through the skin is possible, and skin contact may be harmful. May be toxic if absorbed through the skin.

Ingestion

Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation) nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury. May be toxic if ingested.

Inhalation

Breathing of vapor or mist is possible. Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8). May be toxic if inhaled.

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: respiratory tract, skin, lung (for example, asthma-like conditions), liver, kidney, eye. Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), cough, headache, dizziness, shortness of breath, methemoglobinemia (blood abnormality which causes a blue coloring to the skin). Exposure to this product (or a component) may cause an allergic reaction (narrowing of the air passages of the lungs resulting in difficult breathing, tightness in the chest, coughing and wheezing) in some sensitive individuals. Other symptoms of an allergic reaction may include itchy and watery eyes, runny and stuffy nose, sweating, flushing, hives, rapid heart rate, and lowered blood pressure. May cause methemoglobinemia, a blood abnormality that may cause headache, difficulty breathing, lightheadedness, weakness, confusion, rapid heart rate and cyanosis (lack of oxygen in the tissues causing blue-colored skin and nails).

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: eye damage, kidney damage, liver damage, lung damage

Carcinogenicity

There is no information available. The chance of this material causing cancer is unknown. This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive Hazard

(Ethylenediamine): This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. The relevance of these findings to humans is uncertain.

Mutagenic Effect

(Catechol): Human: HeLa cell; 100 umol/L; MUREAV 92,427,82 [Mutat Res]

Other information

(Ethylenediamine): This product contains amines which may react with nitrites or other nitrosating agents to form nitrosamines. Certain nitrosamines have been shown to cause cancer in laboratory animals.

SECTION 3.COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS# | Concentration |
|-------------------|-------------|----------------------|
| ETHYLENEDIAMINE | 107-15-3 | ➤ >60% |
| Pyrocatechol | 120-80-9 | ➤ > 10 |

| | | |
|----------|-----------|--------|
| Pyrazine | 290-37-9 | > < 1 |
| Water | 7732-18-5 | > < 70 |

SECTION 4. FIRST AID MEASURES

EFFECTS OF OVEREXPOSURE

FIRST AID:

Eye Contact

If material gets into eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

Skin Contact

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Ingestion

Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

Notes to Physician

Hazards: No information available.

Treatment: No information available.

SECTION 5. FIRE FIGHTING MEASURES

Combustible material.

Flash Point: 43.3 °C

| | |
|-------|-------|
| LEL | UEL |
| 1.97% | 14.2% |

Stable. Autoignition temperature in air is approximately 406 °C.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Hazardous combustion products

May form: amines, ammonia, carbon dioxide and carbon monoxide, nitrogen oxides.

Precautions for fire-fighting

If product is heated above flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and become ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes. Water spray can be used to reduce intensity of flames and to dilute spills to nonflammable mixture.

Flammability Class for Flammable Liquids
Combustible Liquid Class II

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

For personal protection see section 8. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

Environmental Precautions

Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill had occurred

Methods for Cleaning Up

Cover the contaminated surface with sodium bicarbonate or a soda ash/flaked lime mixture (50-50). Mix and add water if necessary to form a slurry. Scoop up slurry and wash site with the soda ash solution. Proper mixing procedures are essential. Trained personnel should conduct this procedure. Untrained personnel should be removed from the spill area.

SECTION 7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Combination of nitrites or oxides of nitrogen with secondary or tertiary amines can form nitrosamines which are potential carcinogens. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

Storage

Do not store near extreme heat, open flame, or sources of ignition.

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Guidelines

| ETHYLENEDIAMINE | | 107-15-3 |
|------------------------|-----------------------------------|-----------------|
| ACGIH | time weighted average | 10ppm |
| NIOSH | recommended exposure limit (REL): | 10ppm |
| NIOSH | recommended exposure limit (REL): | 25 mg/m3 |
| OSHA Z1 | permissible exposure limit | 10ppm |
| OSHA Z1 | permissible exposure limit | 25 mg/m3 |

General Advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Eye Protection

Chemical splash goggles and face shield (8" min) in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your industrial hygienist.)

Skin and body protection

Wear resistance gloves (consult your safety equipment supplier). To prevent skin contact, wear impervious clothing and boots.

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH-approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators (negative pressure type) under specified conditions (see you industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|--------------------------------|
| Physical state: | Liquid |
| Form: | Viscous liquid |
| Color: | Dark yellow to amber |
| Odor: | Ammonia-like odor |
| Melting point: | 47.3° F/8.5° C |
| Boiling point/Boiling range: | 116.00-117.00° C/ 241-243° F |
| pH: | > 11 |
| Flash Point: | 109.9° F/ 43.3 ° C, Closed Cup |
| Evaporation rate: | 0.91 |
| Explosion limits: | 2.6% (V) 14.2% (V) |
| Vapor pressure: | 1.61 kPa @ 77° F/25° C |
| Vapor density: | 2.07 (AIR=1) |
| Density: | 0.98 g/cc |
| Solubility: | Miscible with water |
| Auto ignition temperature: | 406 ° C |

SECTION 10. STABILITY AND REACTIVITY

Stability

Stable

Conditions to avoid

Avoid contact with:

Incompatible products

Avoid contact with: acrylates, aldehydes, aluminum, brass, bronze, copper, copper alloys, ketones, nitrites, organic absorbents such as sawdust, peat moss, ground corn cobs, etc., organic halides, strong mineral acids, strong organic acids, strong oxidizing agents, zinc.

Hazardous decomposition products

May form: amines, ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

ETHYLENEDIAMINE

LD₅₀ Rat: 500mg/kg

CATECHOL

LD₅₀ Rabbit: 800 mg/kg

Acute inhalation toxicity

Acute dermal toxicity

ETHYLENEDIAMINE

LD₅₀ Rabbit: 656mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Aquatic toxicity

Acute and prolonged toxicity to fish

No data

Acute toxicity to aquatic invertebrates

No data

Environmental fate and pathways

No data

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods

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

SECTION 14. TRANSPORTATION INFORMATION

DOT Shipping Name: Corrosive Liquid, Basic, Inorganic, N.O.S. (Ethylenediamine and Pyrocatechol)

PGII

UN3266

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY

California Prop. 65

This product contains Catechol, which is listed as causing cancer under California Prop. 65.

