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MATERIAL SAFETY DATA SHEET

TECATRON™ PPS

EMERGENCY TELEPHONE: 724-746-6050 or 856-227-0500
Issue Date: September 10, 1999
Revised Date: July 8, 2004
TRADE NAME: Tecatron PPS
CHEMICAL NAME: Polyphenylene Sulfide, PPS

1. Composition / Information on Ingredients

Ingredients: Base Resin (CAS# 26125-40-6)
This material is a polymeric material. All constituents are wetted by the polymer system, and therefore, present no likelihood of exposure under normal conditions of processing and handling. This product may contain proprietary ingredients. While this product is not classified as hazardous under OSHA Regulations, this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and made available for employees and other users of the product. This product is not regulated by WHMIS.

2. Hazards Identification

Emergency Overview: Pellets or powder with slight to no odor. Combustion and decomposition may produce hazardous fumes. Base resin dust/powder has a US Bureau of Mines relative dust explosion hazard rating of weak. Molten material can cause thermal burns on contact with skin or eyes. Spilled pellets may create a slipping hazard.
Routes of Exposure: Skin and eye contact; inhalation of vapors, if overheated.
Signs and Symptoms of Exposure: No specific information available.
Immediate Effects:
Skin: No specific information available on the product. Hot or molten material has the potential to cause thermal burns. Polymer particles can cause mechanical irritation.
Eyes: No specific information available on the product. Polymer particles can cause mechanical irritation. Degradation vapors may cause irritation.
Inhalation: No specific information available on the product. Pellets are not considered an inhalation hazard; polymer particulates may be considered an inert nuisance particulate. Inhalation of hazardous degradation fumes may cause dizziness, nausea, and irritation to the eyes and respiratory tract.
Ingestion: No specific information available on the product; however, low toxicity by this route is expected based on the biological activity of high molecular weight polyphenylene sulfides.
Long Term/Delayed effects: No specific information available.
Carcinogenicity: Product not considered a carcinogen.
Medical Conditions Aggravated by Exposure: No specific information available on the product. Off-gases, which may be released if overheated, may affect those with chronic diseases of the respiratory system.

3. First Aid Measures

Skin: If hot or molten polymer or hot vapors contact skin, cool rapidly with cold water. If polymer is stuck to skin, do not remove. Seek medical attention. Allow adhered polymer to come off naturally. Removal of adhered polymer may result in more tissue damage than if the polymer is allowed to come off over time.
Eyes: Flush with plenty of water. Seek medical attention if discomfort persists, and to remove foreign body.
Inhalation: Remove to fresh air. Seek medical attention if breathing difficulties occur.
Ingestion: If a significant quantity has been swallowed, give two glasses of water to dilute. See medical attention.

Note to Physicians: This product is essentially inert and nontoxic. However, if it is heated at too high a temperature or if it burns, gases may be released (see Section 4 and 9 for off-gases). Gases that may be formed are extremely foul smelling, even at low and relatively nontoxic concentrations. Patients who have been exposed to off-gases may need to have heir arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal, the patients may still have suffered asphyxia from carbon dioxide replacing oxygen if they were exposed in an enclosed space. While it is unlikely that enough hydrogen sulfide would be formed to cause hydrogen sulfide poisoning, the possibility should be considered if the clinical picture is consistent (similar to cyanide toxicity). Sulfur oxides are respiratory tract irritants. Other irritant gases may also have been formed in lesser amounts. If patients may have inhaled high concentrations of irritation fumes, they should be monitored for delayed onset pulmonary edema. The sulfides and mercaptans can cause nausea and headache as a result of their foul odor.

4. Fire Fighting Measures

Flashpoint: >480^{o}C (896^{o}F) by Tag Closed Cup Method. Base resin dust/powder has a US Bureau of Mines relative dust explosion hazard rating of weak.
Hazardous Products of Combustion: Carbon monoxide, Carbon dioxide, and sulfur oxides.
Extinguishing Media: Water spray, foam, carbon dioxide, or dry chemical.
Fire-Fighting Instructions: Firefighter should wear self-contained breathing apparatus and full fire-fighting turn-out gear (bunker gear). Keep personnel removed from and upwind of fire. Water should be used to keep fire-exposed containers cool. Water, foam, and dry chemical may cause damage to electrical equipment.

5. Accidental Release Measures

Procedures in Case of Spill or Leak: Sweep or gather up spills and place in proper container for recovery or disposal. SPI's Operation Clean Sweep is supported.

6. Handling and Storage

Handling: Do not handle hot or molten material without appropriate protective equipment. Maintain good housekeeping in work areas. Do not exceed recommended process temperatures to minimize release of decomposition products. Do not smoke in areas where polymer dust is present. Appropriate measures should be taken to control the generation and accumulation of dust during conveying and processing operations.
Storage: Store in a cool dry place. Maintain dryness of resin.

7. Exposure Controls / Personal Protection

Engineering Controls: Local Exhaust: Should be used during processing to control employee exposure to process vapors and dust. General: May not be adequate as the sole means to control employee exposure.
Protective Equipment:
Skin: When thermal or melt processing, wear long pants, long sleeves, well insulated gloves, and face shield when there is a chance of contact
Eyes: Safety eyewear recommended.
Inhalation: A NIOSH approved respirator is recommended if there is a possibility of dust generation above permissible exposure limits or that decomposition vapors may be generated.
Exposure Guidelines: Operations involving grinding and machining of parts should be reviewed to assure that particulate levels are kept below recommended standards. This material may contain carbon black. See exposure limits below.

Ingredient	***Agency***	***Value***
Carbon Black	OSHA PEL	3.5 mg/m^3
	ACGIH TLV	3.5 mg/m^3
Nuisance/inert dust	OSHA PEL	15 mg/m^3 (total) 5 mg/m^3 (respirable)
Nuisance particulates	ACGIH TLV	10 mg/m^3 (total) 3 mg/m^3 (respirable)

8. Chemical and Physical Properties

Appearance and Odor: Opaque pellets; slight characteristic odor
Melting Point/Range: 285-300°C (545-572°F)
Vapor Pressure: <0.001 mm Hg
Specific Gravity: 1.3 - 2.1
Solubility: Negligible <0.1% (in water)
Percent Volatiles: <0.5% by weight

9. Stability and Reactivity

Chemical Stability: Stable under ordinary condition of use and storage.
Conditions to Avoid: Flame: Do not heat above 698°F (370°C)

Incompatibility: Not known.
Hazardous Decomposition Products: Phenyl sulfides, n-methyl-2-pyrrolidone, dichlorobenzene, phenyl mecaptan, hydrogen sulfide, butyrolactone, mesityl oxide, acetic acid, phenol, formic acid, succinic acid, chlorine, palmitic acid, p-chlorothiophenol, stearic acid, aromatic compounds, chlorinated aromatic compounds, carbonyl sulfide, and sulfur compounds.
Hazardous Polymerization: Will not occur.

10. Toxicological Information

No specific information available on the product.

11. Ecological Information

Ecotoxicity: the effects of resin pellets on the wildlife that may ingest them is not well understood. In the case of seabirds, some marine biologist believe that the fowl may not be able to pass plastic pellets through their digestive tracts. Thus, large quantities of ingested pellets may cause intestinal blockage, false feelings of satiation or reduction in absorption of nutrients, causing malnutrition and starvation. The goal of SPI's Operation Clean Sweep is zero loss of pellets into the environment.
Environmental Fate/Information: This material is considered to be non-biodegradable.

12. Disposal Considerations

Disposal: Recycling is encouraged. Incinerate or landfill in accordance with federal, state, and local regulations. Incinerator must be approved for sulfur containing wastes. This product as shipped is not a RCR hazardous waste under present EPA regulations.

13. Regulatory Information

TSCA: All the ingredients of this product comply with TSCA Inventory Regulations. This product contains traces of n-methyl-2-pyrrolidone, p-dichlorobenzene and phenol, which are TSCA 12b chemicals. TSCA 12b requires notifying EPA prior to export.

SARA: This product does not contain any toxic chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372.

This material safety data sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe this information to be correct but cannot guarantee is accuracy or completeness. Health and safety precaution in this data sheet may not be adequate for all individuals and/or situations. It is he user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulation. No statement made in the data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.