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Manufacturer's CAGE: 1P573

Material Safety Data Sheet

SPI #00012-MB and #00012-RA Santovac[®] 5 Diffusion Pump Fluid



Section 01 Identification

Date Effective..... May 13, 2004
(most recent revision)

Chemical Name/Synonyms. **100% five ring polyphenyl ether**

Chemical Family..... **Not known**

Emergencies Contacting CHEMTREC 24 Hour Emergency
Use Only #'s.... Worldwide phone : 1-(703)-527-3887
Worldwide FAX : 1-(703)-741-6090
Toll-free phone : 1-(800)-424-9300 USA only

Product or Trade Name.... **SPI #00012-MB and #00012-RA Santovac 5**
Polyphenyl
Ether Diffusion Pump Fluid

CAS #..... 2455-71-2

Chemical Formula..... Not known

Section 2 Composition

CAS #..... 2455-71-2

This product is not a hazardous chemical(s) under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Hazard Identification

Emergency overview:

Appearance and Odor: light yellow essentially clear liquid with no odor to slight phenolic odor

NO SIGNIFICANT HAZARDS ASSOCIATED WITH THIS MATERIAL

POTENTIAL HEALTH EFFECTS

Likely Routes of Exposure: skin contact

Occupational exposure to this material has not been reported to cause significant adverse health effects. On the basis of available information, exposure to Santovac 5 vacuum pump fluid is not expected to produce significant adverse human health effects when recommended safety precautions are followed.

Refer to Section 11 for toxicological information.

Section 4: First Aid Measures

IF IN EYES OR ON SKIN, immediate first aid is not likely to be required. However, this material can be removed with water. Wash heavily contaminated clothing before reuse.

IF INHALED, immediate first aid is not likely to be required. However, if symptoms occur, remove to fresh air. Remove material from eyes, skin and clothing.

IF SWALLOWED, immediate first aid is not likely to be required. A physician or Poison Control Center can be contacted for advice.

Section 5: Fire Fighting Measures

Flash Point: 550° F (287° C)

Method: Cleveland Open Cup

Autoignition Temperature: 1135° F (612° C)

Fire Point: 660° F (348° C)

Extinguishing Media: In case of fire, use water spray (fog), foam, dry chemical, or CO₂

Unusual Fire and Explosion Hazards: None known

Fire Fighting Equipment: Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Fire fighting equipment should be thoroughly decontaminated after use.

Section 6: Accidental Release Measures

Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Flush residual spill area with water.

Refer to Section 13 for disposal information and, Section 15 for reportable quantity information.

Section 7: Handling and Storage

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES. THESE PRACTICES INCLUDE AVOIDING UNNECESSARY EXPOSURE AND REMOVAL OF MATERIAL FROM EYES, SKIN AND CLOTHING.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed.

Storage: Product is stable under normal conditions of storage and handling.

Section 8: Exposure Controls and Personal Protection

Eye Protection: This product does not cause significant eye irritation or eye toxicity requiring special protection. Use good industrial practice to avoid eye contact.

Skin Protection: Although it does not present a significant skin concern, minimize skin contamination by following good industrial practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

Respiratory Protection: Avoid breathing mist. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposure is excessive. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR 1910.134.

Ventilation: Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Airborne Exposure Limits:

Product: Santovac 5 vacuum pump fluid
OSHA PEL: None Established
ACGIH TLV: None Established

Section 9: Physical and Chemical Properties

Appearance: light yellow essentially clear liquid

Odor: odorless to slight phenolic

Boiling Point @ 760 mm Hg: = 889° F (476° C)

Pour Point = 40° F (5° C)

Specific Gravity @ 25/25° C: 1.195-1.201

pH: Neutral

Vapor Density (Air = 1): 15.5

Solubility: Soluble in acetone and light aromatic solvents; insoluble in water

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Section 10: Stability and Reactivity

Product is stable under normal storage and handling conditions.

Materials to Avoid: Exposure to highly oxidizing agents should be avoided.

Hazardous Decomposition Products: Continued use at temperatures above 425° C may result in the formation of benzene and phenol. If the product is burned, complete combustion produces carbon dioxide and water; incomplete combustion produces carbon monoxide (CO), smoke, soot, and lower molecular weight hydrocarbons.

Hazardous Polymerization: Does not occur

Section 11: Toxicological Information

Data from laboratory studies conducted by Monsanto with Santovac 5 vacuum pump fluid are summarized below.

Single exposure (acute) studies indicate:

Oral:	Practically Nontoxic	(Rat LD50 >10,000 mg/kg)
Dermal:	Practically Nontoxic	(Rabbit LD50 >5,000 mg/kg)
Eye Irritation:	Practically Nonirritating	(Rabbit, 0.1/110.0)
Skin Irritation:	Practically Nonirritating	(Rabbit, 24-hr exposure, 0.4/8.0)

In a controlled skin contact study, no skin irritation (primary or cumulative) or skin allergy was observed in humans following repeated exposures to a polyphenyl ether formulation similar to Santovac 5 vacuum pump fluid.

Increases in liver weights and liver/body weight ratios with accompanying increase in liver cell size, considered to be related to increased liver metabolic activity and increases in adrenal weight were noted in rats following repeated skin exposure (4-weeks). Santovac 5 vacuum pump fluid has produced no genetic changes in standard tests using animal or bacterial cells.

Section 12: Ecological Information

Exotoxicity: No information found in our select references.

Environmental Fate: No information found in our selected references.

Bioaccumulation: No information found in our select references.

Section 13: Disposal Considerations

Product to be disposed of, spilled liquid product, or spills absorbed on a solid medium may be classified as "hazardous waste" (D018) due to the presence of benzene over 0.5 mg/L. Waste should be analyzed in accordance with Method 1311 Toxicity Characteristic Leaching Procedure (TCLP) and/or compared to the criteria of 40 CFR 261.24 to insure proper disposal.

Waste product may also be classified as waste oil under state and federal regulations. Any discarded product, whether "hazardous waste" or not, should be incinerated in accordance with all local, state, or federal laws and regulations. Consult your attorney or appropriate regulatory officials for information on such disposal.

Section 14: Transport Information

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

This product is not hazardous under the applicable DOT, ICAO/IATA, or IMDG regulations.

Section 15: Regulatory Information

TSCA Inventory: All components are listed.

SARA Hazard Notification

Hazard Categories Under Title III Rules (40 CFR 370): Not Applicable
Section 313 Toxic Chemical(s): Not Applicable

CERCLA Reportable Quantity: Not Applicable

Refer to Section 2 for OSHA Hazardous Chemical(s) and Section 13 for RCRA classification.

California Prop. 65:
Proposition 65 requires manufacturers or distributors of consumer products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity, it will be listed below:

No data has been generated to our knowledge whether this material has been found to cause cancer, birth defects or other reproductive harm. Therefore, to be on the safe side, we would advice treating this product as if it does have those properties and respond accordingly.

Section 16: Other Information

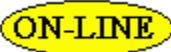

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The information and recommendations set forth above are taken from sources believed to be accurate as of the date hereof, however SPI

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