



Santovac 5 Vacuum Pump Fluid

(Santovac Fluids Inc. - Santovac 5 Polyphenyl Ether Lubricant)

MATERIAL SAFETY DATA SHEET

VARIAN Part Numbers

695405001 – 40 cc

695405002 – 65 cc

695405005 – 500 cc

DISTRIBUTED BY:

**VARIAN VACUUM TECHNOLOGIES
121 HARTWELL AVENUE
LEXINGTON, MA 02421-3133**

www.varianinc.com/vacuum

TO ORDER CALL: 1-800-8 VARIAN (1-800-882-7426)

or

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Santovac[®] Fluids

Material Safety Data Sheet

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **SANTOVAC[®] 5 POLYPHENYL ETHER LUBRICANT**

Date: 01/03/02

Chemical Family: polyphenyl ether

SANTOVAC[®] FLUIDS, INC., 8 Governor Drive, St. Charles, MO 63301

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT

Call CHEMTREC - Day or Night - 1-800-424-9300. Toll free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted)

For additional non-emergency information, call: 636-723-0240

2. COMPOSITION/INFORMATION ON INGREDIENTS

Santovac[®] 5 polyphenyl ether is a five-ring polyphenyl ether. The CAS Number for this material is 2455-71-2.

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

3. HAZARDS 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 polyphenyl ether lubricant is not expected to produce significant adverse human health effects when recommended safety precautions are followed.

Refer to Section 11 for toxicological information.

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.

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. Equipment should be thoroughly decontaminated after use.

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.

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.

8. EXPOSURE CONTROLS/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 Polyphenyl Ether Lubricant

OSHA PEL: None established

ACGIH TLV: None established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: light yellow essentially clear liquid

Odor: Odorless to slight phenolic

Boiling Point: 889°F @ 760 mm Hg

Pour Point: 40°F

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

pH: neutral

Vapor Density: 15.5 (air = 1)

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.

10. STABILITY AND REACTIVITY

Stability: Product is stable under normal storage and handling conditions.

Materials to Avoid: Exposure to materials that are highly oxidizing 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 and partial combustion produces carbon monoxide, smoke, soot and low molecular weight hydrocarbons.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Data from laboratory studies with Santovac® 5 polyphenyl ether lubricant are summarized below.

Santovac® 5 Polyphenyl Ether Lubricant

Single exposure (acute) studies indicate:

- Oral - Practically Nontoxic (Rat LD50 > 34,600 mg/kg)
- Oral - Practically Nontoxic (Rabbit LD50 > 34,600 mg/kg)
- Dermal - Practically Nontoxic (Rabbit LD50 > 34,600 mg/kg)
- Inhalation - Practically Nontoxic (Rat 4-hr LC50 > 47 mg/l. No deaths and no signs of toxicity were observed in animals exposed to 47 mg/l, the highest atmospheric concentration achievable by heating the material to 329°C in this study.)
- Eye Irritation - Nonirritating (Rabbit, 0.0/110.0)
- Skin Irritation - Nonirritating (Rabbit, 24-hr exposure, 0.0/8.0)

Laboratory studies have been conducted on similar polyphenyl ether formulations and these data are considered representative of Santovac® 5 Lubricant.

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 Lubricant.

Increases in liver weights and liver/body weight ratios with accompanying increase in liver cell size, considered to be related in increased liver metabolic activity and increases in adrenal weight were noted in rats following repeated skin exposure (4-weeks) to a second polyphenyl ether formulation. This same formulation produced no genetic changes in standard tests using animal or bacterial cells.

12. ECOLOGICAL INFORMATION

Santovac® Fluids, Inc. has not conducted environmental studies with this product.

13. DISPOSAL CONSIDERATIONS

This material when discarded is not a hazardous waste as defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. Dispose of in accordance with all federal, state and local environmental regulations. Recommended method of disposal is by high temperature incineration at a RCRA approved TSDF. If there are any questions regarding the disposal of this material, please consult the Environmental, Health & Safety Department of Santovac Fluids, Inc. at 636-946-2355.

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.

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.

16. OTHER INFORMATION

Reason for revision: Section 13 - update disposal language

Revision Number: 3

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Date 01/03/02

Supersedes 01/03/00