

SPI Supplies Division

Structure Probe, Inc.

P.O. Box 656 West Chester, PA 19381-0656 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

spi3spi@2spi.com

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: July 27, 2016

00704-MB, 00704-RA

SPI Supplies® 704 Silicone Diffusion Pump Fluid

Section 1.1: Identification

Chemical Name/Synonyms 704 Silicone Diffusion Pump Fluid; Tetraphenyl dimethyl disiloxane + Tetramethyl tetraphenyl trisiloxane + Alkyl phenyl siloxane

Product or Trade Name SPI Supplies® 704 Silicone Diffusion Pump Fluid

CAS #'s 807-28-3; 3982-82-9; 6904-66-1

Chemical Formula Mixture

Section 1.2: Relevant Uses/Restrictions

Vacuum Diffusion Pump Fluid

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

Not a hazardous substance.

2.2 Label elements

Not a hazardous substance.

Other hazards - Chronic Hazards to the Aquatic Environment, Category 4

Hazard statements:

H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements:

P501 Dispose of contents / Container in accordance with local/ regional/ national/ international regulations.

Unknown percentage statements (if needed):

2.3 Other Hazards:

EMERGENCY OVERVIEW

Physical appearance: Colorless or pale yellow liquid.

Immediate concerns: This product is not hazardous under conditions of normal use. Thermal decomposition of this product will generate carbon monoxide, carbon dioxide, and other toxic materials. When fighting fires, use full turnout gear and self-contained breathing apparatus in positive pressure mode. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Do not get in eyes, on skin or clothing. So not flush to sewer. Avoid runoff into storm sewers and ditches which lead to waterways.

Potential health effects:

Eyes: May cause mild transient irritation, but there is no evidence of long term harmful effects from available information.

Skin: No adverse effects are expected.

Skin absorption: A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amount.

Ingestion: Low ingestion hazard in normal use.

Inhalation: Avoid breathing vapors or mists. Poses little or no immediate hazard:

Reproductive toxicity:

Reproductive effects: Not available

Teratogenic effects: Not Available

Carcinogenicity: Not listed as a human carcinogen by IARC, NTP, and ACIGH.

Mutagenicity: Not available.

Medical conditions aggravated: Not available.

Target organ statement: Inhalation, ingestion, eye contact, or skin contact.

Irritancy: Non irritating.

Sensitization: Non sensitizing.

Hazardous Material Information System USA

Health 1

Fire Hazard 1

Reactivity 0

Personal Protection B

NFPA Rating (estimated)

Health 1

Flammability 1

Reactivity 0

Section 3: Composition

3.1 Substances: N/A

3.2 Mixtures:

Chemical Name	Wt. %	CAS#	EU#
Tetraphenyl dimethyl disiloxane	20-40%	807-28-3	212-361-3
Tetramethyl tetraphenyl trisiloxane	20-40%	3982-82-9	223-620-5
Alkyl phenyl siloxane	15-30%	6904-66-1	230-013-9

Section 4: First Aid Measures

4.1 Description of first aid measures:

Eye Contact: Immediately flush eyes with plenty of water. Get medical attention if irritation persists.

Skin Contact: Not normally needed.

Ingestion: Not normally needed.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

Self-protection of the first aider: Not normally needed.

4.2 Most important symptoms and effects, both acute and delayed

Eyes: May cause mild transient irritation but there is no evidence of long term harmful effects from available information.

Skin: None expected.

Skin absorption: None expected.

Ingestion: None expected

Inhalation: None expected.

Acute toxicity: Poses little or no immediate hazard.

Chronic effects: No adverse effects are normally expected.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically.

Section 5: Fire Fighting Measures

5.1 Extinguishing media: Use dry chemical, approved foam, carbon dioxide, or water fog. Avoid using water spray which may spread the fire. Carbon dioxide or inert gas may displace oxygen. Observe caution when using in a confined space.

5.2 Special hazards arising from the substance or mixture:

Hazardous combustion products: Thermal decomposition during fire or very high heat may evolve carbon oxides, silicon dioxide, and formaldehyde. Traces of benzene (carcinogen) may form if heated above 300 °F (149 °C).

5.3 Advice for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH) approved or equivalent) and full protective gear.

Special protective equipment and precautions for firefighters: No further information available.

Section 6: Accidental Release Measures

6.1 Personal precautions:

Small Spill: Clean up spills immediately, observing precautions in Protective Equipment section.

Large Spill: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Shut off leak if safe to do so. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. US regulations require reporting spill of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is (800) 424-8822.

6.2 Environmental precautions:

Water Spill: This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

6.3 Methods and material for containment and cleaning up:

General procedures: Clean up spills immediately, observing precautions in Protective Equipment section. Do not flush to sewer. Absorb spill with inert material, oil dry, or spill absorbents. Collect contaminated media for proper disposal according to all applicable regulations. It may be possible to vacuum and reclaim the spilled liquid.

6.4 Reference to other sections:

See Section 8 for Personal Protective Equipment.

See Section 13 for Disposal information.

Section 7: Handling and Storage

7.1 Precautions for safe handling

General Procedures: This product is not hazardous under conditions of normal use. If using this product at elevated temperatures, use only in a well ventilated. Area. Traces of benzene (carcinogen) may form if heated above 300 °F (149C). Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid contact with eyes.

Handling: Keep away from heat and flame. Keep container closed when not in use. Remove contaminated clothing and wash before reuse. Wash hands before eating. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities: Keep in a cool, well-ventilated place away from oxidizing materials. So not reuse this container. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner, or properly disposed of.

7.3 Specific end uses: Vacuum Diffusion Pump Fluid

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection

Facilities storing or utilizing this material should be equipped with an eye-wash station and a safety shower.

Work hygienic practices: Practice good chemical hygiene during and after use.

Workplace exposure limits: There are no established workplace exposure limits for components of this product.

Biological limit values: No available information.

8.2 Exposure controls

8.2.1 Appropriate engineering controls: Good general ventilation should be sufficient to control airborne

8.2.2 Individual protection measures:

Eyes and face: Wear safety glasses.

Skin: Not normally needed.

Respiratory: Not normally needed. If ventilation is inadequate and this material is handled at elevated temperatures or dusts/ fumes/ mists are generated, a NIOSH/MSHA approved air purifying respirator with a manufacturers approved cartridge or canister may be permissible, under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure, air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

8.2.3 Environmental exposure controls: No additional information available.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: Pale Yellow or Clear Liquid.

Odor: None.

Odor threshold: Not available.

pH: Not applicable.

Melting point/Freezing point: Not available.

Boiling point/Boiling point range: Not available.

Flash Point and Method: >101°C (214°F) (Cleveland Open Cup ASTM D92)

Evaporation rate: Not available.

Flammability (solid, gas): Not available.

Upper/lower flammability or explosive limits: Not established.

Vapor Pressure: 1E(-6) at 25°C

Vapor density: Not available.

Relative density: Not available.

Solubility: Not available.

Partition coefficient (n-octanol/water): Not available.

auto-ignition temperature: Not established.

Decomposition temperature: Not available.

Specific Gravity: ~1.097

Viscosity #1: 180 cSt at 25°C.

Explosive properties: Not established.

Oxidizing Properties: Not applicable.

9.2 Other information: No additional information available.

Section 10: Stability and Reactivity

- 10.1 Reactivity: Not available.
- 10.2 Chemical Stability: Stable
- 10.3 Possibility of Hazardous Reactions: No
- 10.4 Conditions to avoid: Not established.
- 10.5 Incompatible materials: Oxidizing materials.
- 10.6 Hazardous decomposition products: Thermal decomposition products may include: Silica, Carbon oxides, Formaldehyde.

Section 11: Toxicological Information

- 11.1 Information on toxicological effects
 - a. acute toxicity
 - Dermal LD₅₀: >2000 mg/kg (dermal, rabbit)
 - Notes: No adverse effects are expected.

 - Oral LD₅₀: >2000 mg/kg (oral, rat)
 - Notes: No adverse effects are expected.

 - Inhalation LC_{5,0}: No adverse effects are expected.
 - b. skin corrosion/irritation:
 - Skin absorption: A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amount.
 - Skin effects: No adverse effects are expected.
 - c. serious eye damage/irritation: May cause mild transient irritation, but there is no evidence of long-term harmful effects from available information.
 - d. respiratory or skin sensitization: No information available.
 - e. germ cell mutagenicity: No information available.
 - f. carcinogenicity: Not listed by IARC, NTP, or OSHA as a human carcinogen.
 - g. reproductive toxicity: No information available.
 - h. STOT-single exposure: No information available.
 - i. STOT-repeated exposure: No information available.
 - j. aspiration hazard: No information available.

Section 12: Ecological Information

Environmental Data: Avoid release to the environment. Avoid runoff into storm sewers and ditches which lead to waterways.

Ecotoxicological Information: Not fully known.

- 12.1 Toxicity:** No data available.
 - Aquatic Toxicity (Acute): Not available.

12.2 Persistence and degradability: Siloxanes are removed from water by sedimentation or binding to sewage sludge. In soil, siloxanes are degraded.

Chemical Fate information: Not fully known.

12.3 Bioaccumulative potential: This material is not expected to bioaccumulate.

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects:

Due to the lack of available data, this product has been categorized under GHS as a category 4 chronic aquatic hazard.

Section 13: Disposal Considerations

13.1 Waste treatment methods

Disposal Method: Recycle or dispose of according to all applicable federal, state, provincial, and local regulations.

Empty Containers: "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner, or properly disposed of.

Comments: Hazard characteristics and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Section 14: Transport Information

DOT – Not regulated

IATA – Not regulated

IMDG – Not regulated

14.1 UN number – Not applicable

14.2 UN proper shipping name – Not applicable

14.3 Transport hazard class(es) – Not applicable

14.4 Packing Group – Not applicable

14.5 Environmental hazards : Marine Pollutant #1: Not a DOT 'Marine Pollutant' per 49CFR 171.8.

14.6 Special precautions for user – Not applicable.

Section 15: Regulatory Information

15.1

United States:

Sara Title III (Superfund Amendments and Reauthorization Act)

311/312 Hazard categories: None

Fire: No Pressure Generating: No Reactivity: No Acute: No Chronic: No

313 Reportable ingredients: None

302/304 Emergency Planning: None

CERCLA (Comprehensive Response, Compensation, and Liability Act)

CERCLA Regulatory: NA = Not applicable.

TSCA (Toxic Substance Control Act)

TSCA Status: All components of this product are included in inventory, exempt, or notified.

Clean Air Act

40CFR 68- -Risk Management for Chemical Accident Release Prevention: NA = Not applicable.

Occupational Safety and Health Administration (OSHA)

29CFR 1910.119 – Process Safety Management of Highly Hazardous Chemicals:
NA=Not applicable.

REGULATIONS

State regulations:

Tetramethyltetraphenyl trisiloxane, CAS# 3982-82-9, is listed on the New Jersey and Pennsylvania Right-to-Know Lists.

Tetraphenyldimethyl disiloxane, CAS# 807-28-3, is listed on the New Jersey Right-to-Know List.

Alkyl phenyl siloxane, CAS# 6904-66-1, is listed on the New Jersey Right-to-Know List.

California Proposition 65: This product is not known to contain any components for which the State of California has found to cause cancer, birth defects, or other reproductive harm.

RCRA Status: Not listed or controlled.

CANADA:

WHMIS (Workplace Hazardous Materials Information System): Not listed or controlled.

Domestic Substance List (Inventory): All components of this product are included in the inventory, exempt, or notified.

MEXICO: Not available.

GENERAL COMMENTS: All components of this product are included in inventory, exempt , or notified:
USA TSCA, European EINECS, Australian AICS, Canadian DSL, China IECSC, Japanese ENCS, Korean KECL, Philippines PICCS.

15.2 Chemical Safety Assessment

Date of Preparation: July 27, 2016.

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxicological

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit
STEL: Short Term Exposure Limit

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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