



326 Exchange Drive
 Arlington, Texas 76011
 817-469-7777

Product Information: SPI-071

Description:

Silicones Plus SPI-071 is a unique, fast-drying solvent that can be in a variety of cosmetics and skin care formulations.

SPI-071 (methoxynonafluorobutane) is a clear, colorless fluid with low odor. It is a fast-drying cosmetic fluid with a boiling point of 61°C and 76°C, respectively. Cosmetic fluids can be used to replace or in conjunction with alcohol or other fast-drying solvents, such as silicone fluids. Silicones Plus fluids are environmentally favorable solvents offering a unique balance of properties.

Applications:

- ✦ Carrier for aerosols
- ✦ Solvent and emulsion stabilizer
- ✦ Alcohol replacement
- ✦ Fragrance extraction

Features:

- ✦ Safety Properties: Nonflammable, Low Toxicity
- ✦ Environmental Properties: Non-VOC, Low water solubility
- ✦ Performance: Solvency, Compatibility, Stability, Low viscosity

Specification	Range
Methoxynonafluorobutane	99.5% minimum
INCI (CTFA)	Methyl Perfluorobutyl Ether Methyl Perfluoroisbutyl Ether
Non-volatile Residue (NVR)	1.0 ppm maximum
Appearance	Clear, colorless liquid
Formulation C4F9OCH3	Formulation C4F9OCH3
Boiling Point @ 760 mm Hg 61°C	Boiling Point @ 760 mm Hg 61°C
Freezing Point -135°C	Freezing Point -135°C
Flash Point None	Flash Point None
Flammable Limits in Air (vol%) None	Flammable Limits in Air (vol%) None
Liquid Density (g/ml) 1.52	Liquid Density (g/ml) 1.52
Liquid Viscosity (cSt) 0.38	Liquid Viscosity (cSt) 0.38
Refractive Index @ 25°C 1.2713	Refractive Index @ 25°C 1.2713
Vapor Pressure (mm Hg) 202	Vapor Pressure (mm Hg) 202
Specific Heat (cal/g °C) 0.28	Specific Heat (cal/g °C) 0.28
Heat of Vaporization (cal/g @ B. P.)	29
Surface Tension (dynes/cm)	13.6
Solubility of Water in Product (ppm by weight)	95
Ethanol	Miscible



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1-propanol	Miscible
1-butanol	16.8
1-pentanol	4.5
1-hexanol	2.9
1-octanol	1.7
Esters	Miscible
Ethers	Miscible
Silicone OS-10	Miscible
Silicone OS-20	Miscible
Alkanes C5-C9	Miscible
Alkanes C10	15.9
Alkanes C12	Dispersion

Cosmetic Fluids Materials Compatibility:

Testing of SPI-071 in neat form demonstrates compatibility with a wide range of metals, plastics, and elastomers. Although SPI-071 shows good short-term compatibility with fluorinated plastics and elastomers at room temperature, the fluid will absorb into these materials over longer exposure times.

Metals:

Plastics:

Elastomers:

Metals:	Plastics:	Elastomers:
Aluminum	Acrylic (PMMA)	Butyl Rubber
Copper	Polyethylene	Natural Rubber
Carbon Steel	Polypropylene	EPDM
302 Stainless Steel	Polycarbonate	EPR
Brass	Polyester	
Molybdenum	Epoxy	
Tantalum	PET	
Tungsten	Phenolic	
Cu/Be Alloy C172	ABS	
Mg Alloy AZ32B		

Environmental Properties:

Properties:	Result:
Ozone Depletion Potential	0.00
Global Warming Potential	320
Atmospheric Lifetime (years)	4.1
Exposure Guidelines (8hr)	750 ppm
VOC Status	Exempt



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Regulatory Status:

SPI-071 has been accepted for commercial use by regulatory agencies in the United States, Canada, Japan, Korea, Australia and Europe (under the European List of Notified New Chemical Substances).

SPI cosmetic fluids have been approved under the Significant New Alternatives Policy (SNAP) of the U.S. EPA. In addition, SPI cosmetic fluids have been excluded by the U.S. EPA from the definition of a VOC on the basis that these compounds have negligible contribution to tropospheric ozone formation.

Contact your local Silicones Plus representative regarding regulatory status and coding assistance for cosmetic fluids.

Toxicity Profile:

The toxicological testing completed on SPI-071 indicates that overall toxicity is low. The material is practically non-irritating to the eyes, minimally irritating to the skin and not a mutagen or cardiac sensitizer. They are rated “practically nontoxic” through inhalation.

Properties:	Result:
Acute Lethal Inhalation Concentration	>100,000 ppm (4 hrs)
Oral	Practically non-toxic (>5g/ kg)
Eye Irritation	Practically non-irritating
Skin Sensitization	Not a skin sensitizer
Developmental Toxicity	Detailed results are available
Mutagenicity	No signs of sensitization at exposures up to 100,000ppm
Ecotoxicity Testing	Complete – very low aquatic toxicity
90-day inhalation	750 ppm exposure guideline

Fluids Purity Specifications:

These products are certified by 3M to contain 50ppb or less of the following heavy metals.

Ag, Al, As, B, Cu, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Na, Ni, Pb, Sr, Ti, Zn

Environmental Policy:

SPI will continue to recognize and exercise its responsibility to: prevent pollution at the source wherever and whenever possible; develop products that will have minimal effect on the environment; conserve natural resources through the use of reclamation and other appropriate methods; assure that its facilities and products meet and sustain the regulations of all national and other official organizations engaged in environmental activities.

Environmental Health and Safety:

Before using this product, please read the current product Material Safety Data Sheet (available through your SPI sales or technical service representative) and the precautionary statement on the product package. Follow all applicable precautions and



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directions.

Packaging & Supplied Forms:

SPI-071 may be ordered in the following container sizes:

- 55-gallon drum (600 lbs, 272.1 kg)
- 3.5-gallon pail (33 lbs, 15 kg)
- 1-gallon pail (12 lbs, 5.4 kg)
- 4-ounce sample (.353 lbs, 160 g).

Special Use and Safe Handling Information:

SPI-071 is nonflammable and do not exhibit flammability characteristics under normal operating and storage conditions. This fluid is highly resistant to thermal breakdown and hydrolysis in storage and during use. Recommended handling procedures are provided in the pertinent Material Safety Data Sheets available through your local SPI sales or technical representative upon request.

TSCA Registered: All components of this product are registered in the TSCA Inventory.

This data is offered in good faith as typical values and not as a Product Specification. No warranty, either expressed or implied, is hereby made. Silicones Plus believes that that information contained in this publication is an accurate description of the typical characteristics and/or uses of this product but it is your responsibility to thoroughly test the product in your specific application to determine is performance, efficacy and safety. Suggestions of uses should not be taken as inducements to infringe any particular patent.