Technical datasheet HFE-7500

Product name: 2-(Trifluormethyl)-3-ethoxydodecafluorohexan

Synonyms: HFE-7500; Heat transfer fluid; heat transfer medium

CAS-NR.: 297730-93-9

Introduction

This product is a clear, colorless, odorless fluid that has utility in a wide variety of applications, including heat transfer, lubricant deposition, electronic testing and cleaning applications.
This product is non-flammable, thermally stable, non-ozone depleting, and has a very low global warming potential. It does not contribute to the formation of photochemical smog.
It is recommended for use as a replacement for perfluoropolyethers (PFPEs), perfluorocarbons (PFCs), hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFCs).
On this basis, it provides a useful tool to help meet commitments for greenhouse gas emission reduction.
The boiling point, wide liquid range and low-temperature viscosity of this product make it ideal for cooling ion implanters, dry etchers, and CVD machines. It is effective at mitigating the aggressiveness of solvents and is useful in inerting the flammability of blends. The chemical and thermal stability of this product lend to its use as a reaction media.

HFE 7500 contains fluorine; for sale and use by professional, commercial users only! Not intended for private use!
HFE 7500 is a PFAS material

Typical physical properties

Appearance	Clear, colorless liquid
Molecular weight	414g/mol
Boiling point	128°C
Freeze point	-100°C
Critical temperature	261°C
Critical pressure	1,55 Mpa
Density of the liquid	1,62 g/ml. (25°C)
Surface tension	16,2 mN/m
Solubility of the solvent in water (ppmw))	<3
Kinematic viscosity (25°C)	0,75 cSt (25°C)
Kinematic viscosity (-35°C)	3,05 cSt (-35°C)
Specific heat capacity	1143 j/Kg*K
Heat of vaporization	88,5 kJ/kg
Expansion coefficient	0,00129K^{-1}
Thermal conductivity	0,068 W/m.K
Insulation resistance	35 kV
Dielectric constant	5,8
Specific resistance	2,2*10⁸ Ω*cm

Environmental properties

Ozone depletion potential (ODP)	0
Global warming potential (GWP)	90
Atmospheric service life	2,2
Flash point	none
Flammability range in the air	none
Labeling	not a hazardous substance
Hazardousness	Non-toxic to humans in typical use
Exposure of persons to solvent vapors in the breathing air	max. 100 ppm (8 hour average)

Heat transfer

This product is ideal as a heat transfer fluid for the demanding requirements of semiconductor processing and electronics equipment. It is designed to balance performance with favorable environmental and worker safety properties.

In heat transfer applications, it offers:

- Excellent dielectric properties
- Non-flammability
- Wide liquid range
- Low Global Warming Potential (GWP)
- Zero Ozone Depletion Potential (ODP)
- Good materials compatibility
- Low toxicity

For heat transfer applications, favorable environmental health and safety properties make it a longterm, sustainable solution, helping improve reliability, address environmental concerns and lower overall operating costs.

Solvent Properties

Data compiled from published information, not compiled specification purposes.
It is an excellent replacement for PFCs, HCFCs, and MFCs in many solvent applications. It has shown utility in solvent cleaning applications -both in its neat form, and when blended with organic solvents, and/or other hydrofluoroethers, hydrofluorocarbons and other fluorinated solvents.

Materials Compatibility

It is compatible with most metals and hard polymers such as:

Metals	**Plastics**	**Elastomers**
Stainless Steel	Polycarbonate	EPDM
Nickel	PMMA	Natural Rubber
Copper	ABS	Polyurethane
Aluminium	Polypropylene	
Monel	Polyethylene	

Safety and handling

Be sure to read and follow the precautions and instructions for use contained on the product label and safety data sheet before using this product. It is non-flammable and has a high resistance to thermal degradation and hydrolysis during storage and use. Recommended handling procedures are given in the safety data sheet.

If you have any questions about the material and its processing, please contact:
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