

## VERSATILL® HTF-30

### DESCRIPTION

Versatill® HTF-30 is a fluorinated solvents mixture with a normal boiling point (NBP) of 28.9°C is especially designed as heat transfer fluid for low temperature heat removal on direct contact using two phase (liquid - vapor) application. It is a nonflammable solvent that has excellent material compatibility, low surface tension, low Global Warming Potential and Zero ODP.

### APPLICATIONS

- Semiconductor Ion implanters Dry etchers CVD/PVD tools
- Electronic Automated Test Equipment (ATE)
- Electronic Cooling Supercomputers
- Sensitive electronics High voltage transformers
- Direct contact cooling
- Heat pipes
- Heat transfer fluid
- High temperature heat pumps

### ADVANTAGES

- Non-flammable
- Non-corrosive
- Low global warming potential (GWP)
- Zero ozone depletion potential (ODP)
- Low surface tension, low viscosity, high liquid density
- Excellent thermal, dielectric, chemical, and hydrolytic stability
- Superior drying property
- Excellent permeability
- Thermodynamic fluid.
- Recyclable

# TECHNICAL DATA SHEET

## PROPERTIES

Physical Properties of Versatill® HTF-30	
Boiling point (NBP)	28.9°C
Critical Temp.	183°C
Critical Pressure	33 Bar
Liquid Density (Kg/M <sup>3</sup> , 25°C)	1,278
Vapor Density (Kg/M <sup>3</sup> , 25°C)	3.79
Viscosity (cST, 25°C)	0.44
Surface Tension (dyne/cm/ 25°C)	16.4
Latent Heat of Vaporization (KJ/kg, 25°C)	190
Specific Heat Capacity, Liquid (KJ/kg K, 25°C)	1.360

## COMPATIBILITY

Versatill® HTF-30 has a wide range of compatibility with many type of materials.

It is generally compatible with all non fluorinated plastics and elastomers.

Thermoplastics	Compatibility
	+
PVC (Polyvinylchloride)	
High-density polyethylene	+
PMMA (Polymethyl methacrylate)	-
Polycarbonate	+
Polypropylene	+
Nylon 66	+
Polystyrene	+
PETG Polyethylene terephthalate	+
PTFE	+
<b>Elastomers</b>	
Neoprene	+
Viton® A	-
EPDM rubber	+
Natural rubber	-
Nitrile rubber	+
Silicone	o

Table : + compatible / o border line / - not compatible

# TECHNICAL DATA SHEET

## SAFETY, ENVIRONMENTAL AND HEALTH

### Environmental Properties

Properties	Versatill® HTF-30
Ozone Depletion Potential (ODP) <sup>1</sup>	None
Global Warming Potential (GWP) <sup>2</sup>	850
Flash point	None

<sup>1</sup> CFC-11= 1.0

<sup>2</sup> CO<sub>2</sub> =1.0, 100yr ITH

### Health Profile

Properties	Versatill® HTF-30
Acute Lethal Concentration (ppm)	>50,000
8 hr Exposure Guideline (ppm)	300
Skin Irritation	Negligible
Mutagenicity	Negative
Ecotoxicity	Very low (EC <sub>50</sub> >118mg/L 72Hrs, algae)
Acute Oral Toxicity	LD <sub>50</sub> > 2000 mg/kg
28-day Inhalation	NOAEL=2000 ppm

Please refer to the current product Safety Data Sheet and the precautionary statement on the product package prior to use. Follow all applicable precautions and directions.

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