

TMC-3283

TMC-3283 is a clear, colorless, thermally stable, fully fluorinated liquid, ideal for use in many single-phase heat transfer applications in the semiconductor manufacturing industry. This makes it an ideal heat transfer fluid for etchers, ion implanters, testers, and others.

TMC-3283 is primarily a single compound, its composition will not shift or fractionate with time. This keeps fluid loss to a minimum and insures that heat transfer properties will not change with time.

Features

- REPLACEMENT TO 3M™ FC-3283
- MISCIBLE WITH 3M™ FC-3283
- ZERO OZONE DEPLETION POTENTIAL (ODP)
- LOW GLOBAL WARMING POTENTIAL (GWP)
- RECLAIMABLE BY TMC INDUSTRIES, INC.

Packaging Information

Sold in:

- 1 gal. Bottle - 11 lbs. (5 kg)
- 3.6 gal. Pail - 55 lbs. (25 kg)
- 55 gal. Drum - 550 lbs. (250 kg)

Applications

TMC-3283 is ideal for a variety of applications such as Heat Transfer, Semiconductor Cooling, Ion Implanters, Testers, Dielectric Bath and Etchers.

Properties

Appearance	Clear, colorless liquid
Average Molecular Weight	521 (g/mol)
Boiling Point (1 atm)	128 (°C)
Pour Point	-65 (°C)
Calculated Critical Temperature	235 (°C)
Calculated Critical Pressure	1.22 (Mpa)
Vapor Pressure	1440 (Pa)
Latent Heat of Vaporization (at normal boiling point)	78 (kJ/kg)
Liquid Density	1820 (kg/m ³)
Kinematic Viscosity	0.75 (cSt)
Absolute Viscosity	1.4 (cP)
Liquid Specific Heat	1100 (J/kg-K)
Liquid Thermal Conductivity	0.066 (W/m-K)
Coefficient of Expansion	0.0014 (K ⁻¹)
Refractive Index	1.28
Surface Tension	14.6 (mN/m)
Volume resistivity	10 ¹⁵ (Ohm-cm)
Ozone Depletion Potential	0
Solubility of Water in Fluid	7ppm
Dielectric Constant	1.9

Test Result Summary: Third Party Lab Tested By Intertek

Test Item	Method	Temperature	Test Result
			Submitted samples
Boiling Point °C	OECD TG 103	--	127°C
Pour Point °C	ASTM D-97	--	<-50°C (**)
Dielectric Strength, 0.1" gap	ASTM D-877	20°C	43.1KV
		60°C	42.3KV
Viscosity (cSt) (-20°C~80°C)	ASTM D-445	-20°C	2.76
		-10°C	1.98
		0°C	1.65
		10°C	1.35
		20°C	0.94
		30°C	0.76
		40°C	0.65
		50°C	0.54
		60°C	0.47
		70°C	0.44
Vapor Pressure (kPa) °C	ASTM D-323	25°C	1.4
		60°C	7.1
		80°C	12.6

Materials Compatibility

TMC-3283 liquid is compatible with most metals, plastics, and elastomers.

Environmental Properties

TMC-3283 has zero ozone depletion potential. Low GWP as an alternative, it is lower than FC-3283. TMC Industries recommends that users of TMC-3283 further limit emissions by employing good conservation practices, and by implementing recovery, recycling and/or proper disposal procedures.

Health & Safety

Before using this product, please read the current product Safety Data Sheet (available through your TMC Industries sales or technical service representative) and the precautionary statement on the product package. Follow all applicable precautions and directions. Electronic fluorinated liquid TMC-3283 liquid is non-flammable and is highly resistant to thermal breakdown and hydrolysis in storage and during use. Recommended handling procedures are given in the Safety Data Sheet.

Recycle and Reclaim Options

TMC Industries Inc. reclaim service provides significant savings over the cost of new fluid and helps protect the environment by drastically reducing the amount of your waste stream. Reduce your hazardous waste disposal and achieve better environmental stewardship. TMC Industries, Inc. properly disposes of the contaminants.

Quality Assurances

We guarantee our reclaimed solvents to have new qualities and performance capabilities. To support our confidence, pre- and post-processing analytical data accompanies each shipment.

Save on Disposal Costs

Reduce your hazardous waste disposal. Have TMC Industries reclaim your contaminated fluids to their original state and purity and return them to you at about 1/3 the cost of replacing them with new fluids.



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