

## TMC-7100

TMC-7100 is designed to replace ozone-depleting substances in many applications. This CFC replacement fluid has one of the best toxicological profiles with a 750 ppm (eight hour average) time-weighted average exposure guideline.

The chemical and thermal stability, along with a high boiling point and low surface tension, make it ideal for use in vapor degreasing, along with many other industrial and specialty solvent applications.

### Features

- REPLACEMENT TO 3M™ NOVEC™ 7100
- ZERO OZONE DEPLETION POTENTIAL (ODP)
- LOW GWP
- NON-FLAMMABLE
- MISCIBLE WITH NOVEC™ 7100
- LOW SURFACE TENSION
- NO FLASH POINT
- RoHS COMPLIANT

#### Packaging Information

*Sold in:*

- ▶ 1 gal. Bottle - 12 lbs (5 kg)
- ▶ 5 gal. Pail - 44 lbs. (20 kg)
- ▶ 55 gal. Drum - 550 lbs. (250 kg)

### Applications

Electronic Cleaner, Specialty Solvent, Heat Transfer Fluid, Dielectric Test Media, Lubricant Carrier Solvent, Spray Contact Cleaner, CFC, HCFC, HFC and PFC Replacement, Spot-Free Water Drying Agent, Medium-Duty Cleaning Azeotrope- Oils, Greases and Waxes, Light-Duty Cleaning Particulates, Fluorolubes, Light Oils, Fluoropolymers, Heavy-Duty Cleaning (Co-Solvent) Heavy Oils, Greases and Fluxes.

### Materials Compatibility

TMC-7100 fluid compatible with most metals and hard polymers. Soft and elastomeric materials should be limited to compounds that contain the least amount of extractable plasticizer.

As with most fluorinated fluids, TMC-7100 fluid will absorb into fluorinated plastics and elastomers over longer exposures.

### Safety & Handling

TMC-7100 is nonflammable and does not exhibit flammability characteristics under normal operating and storage conditions. Recommended handling and procedures are provided in the SDS.

### Storage

Store in a tightly closed original container. Store away from acids. Store away from strong bases. Store away from oxidizing agents.

# Properties

Molecular Formula:  $C_4F_9OCH_3$

## Physical Properties

Average Molecular Weight	250(g/mol)
Boiling Point	61(°C)
Pour Point	-135(°C)
Calculated Critical Temperature	195(°C)
Calculated Critical Pressure	2.23(Mpa)
Vapor Pressure	202(mmHg)
Latent Heat of Vaporization	112(kJ/kg)
Liquid Density (25°C)	1520(kg/m <sup>3</sup> )
Kinematic Viscosity	0.38(cSt)
Absolute Viscosity	0.58(cP)
Liquid Specific Heat	1183(J/kg-K)
Coefficient of Expansion	0.0018(K <sup>-1</sup> )
Surface Tension	13.6(mN/m)
Dielectric Strength	>25(kV)
Dielectric Constant@1kHz	7.4
Volume Resistivity	10 <sup>8</sup> (Ohm-cm)
Solubility of Solvent in Water	12(ppm)
Solubility of Water in Solvent	95(ppm)

## Environmental and Safety Properties

Ozone Depletion Potential-ODP1	0.00
Global Warming Potential	320
Atmospheric Lifetime (years)	4.1
Flash Point	None
Flammability Range in Air	None
Exposure Guidelines (8 hr. time-weighted average)	750
Exposure Ceiling (ppm)	None

## Toxicity Profile

Acute Lethal Inhalation Concentration	>100,000 ppm(4 hour)
Eye Irritation	Practically Non-Irritating
Skin Irritation	Minimally Irritating
Oral	Practically Non-Irritating
Skin Sensitization	Not a Skin Sensitizer
Cardiac Sensitization	No Signs of Sensitization at Exposures up to 100,000ppm
Ecotoxicity Testing	Complete - Very Low Aquatic Toxicity

## Vapor Pressure and Density

The variation of vapor pressure and density with temperature for TMC-7100 can be calculated using the following formulas:

$$\text{Vapor Pressure: } \ln P = 22.415 - 3641.9 [1/(t+273)]$$

$$\text{Density: } D = 1.5383 - 0.002269t$$

P = Vapor Pressure in Pascals

t = Temperature in °C

D = Density in g/ml

### Distillation, ASTM D 86.b

	Results
Initial Boiling Point, °C	59
5% Recovered, °C	60
10% Recovered, °C	60
15% Recovered, °C	60
20% Recovered, °C	60
30% Recovered, °C	60
40% Recovered, °C	60
50% Recovered, °C	60
60% Recovered, °C	60
70% Recovered, °C	60
80% Recovered, °C	60
90% Recovered, °C	60
100% Recovered, °C	60
Percent Recovery, %	100.0
Percent Residue, %	0.0
End Point, %	100
Loss, %	0.0

## Recycle and Reclamation

Why pay for expensive disposal services, when TMC Industries can reclaim your used fluorinated fluids, restoring them to like-new condition, saving you up to 50% in replacement fluids? TMC Industries also buys and resells used fluorinated fluids. Contact us for more details.



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