

TC- 7100 Heat Transfer Fluid

TC- 7100 is an inert, dielectric, nonflammable, hydrofluoroether (HFE) heat transfer fluid that can be used as an alternative to perfluorocarbons and perfluoropolyethers. TC- 7100 boasts a low global warming potential and can be used in a variety of applications. Compatible with most plastics and electronics.

Applications

- Semiconductor manufacturing
- Industrial/chemical manufacturing
- Pharmaceutical manufacturing
- Test equipment cooling
- Compute, transformer and electronic cooling

Properties and Usage Benefits

- Chemical and thermal stability for consistent performance in semiconductor manufacturing and supercomputing
- Reliable and consistent cooling capabilities able to perform through single-phase and two-phase immersion cooling
- No residue and clean evaporation
- Nonflammable for worker safety in chemical and pharmaceutical industries
- Low toxicity profile

Material Compatibility

HFE fluids can extract plasticizer from elastomers. Use should be limited to elastomers with low amounts of plasticizer such as butyl, EPR, and EPDM.

Properties	
Tyrell Part #	TC- 7100
Type	HFE
Boiling point	61 °C
Pour point	<- 135 °C
Density	1.52 g/cm ³
Kinematic viscosity	0.38 cSt
Vapor pressure	27 torr
Specific heat	1.172 KJ/Kg-K
Heat of vaporization at boiling point	112 KJ/Kg
Refractive index	1.27
Coefficient of thermal expansion	0.00171 °C ⁻¹
Surface tension	13.6 dyne/cm
Thermal conductivity	0.069 (W/m ⁻¹ °C ⁻¹)
Dielectric strength 2.54mm gap KV	28 kV
Dielectric constant	7.52
Volume resistance	2·10 ⁹ Ohm·cm
Average molecular weight	250 amu
Dissipation factor (1 Khz)	Not available
Solubility of water	12 ppm (wt)
Solubility of air	Not Available

Safety

Worker safety is of utmost importance. HFE fluids are nonflammable and the overall toxicity profile is low. HFE fluids can be mildly irritating to the skin and eyes.