



What is Solstice[®] Propellant?

Solstice[®] Propellant is a new nonflammable aerosol propellant that has an ultra-low global warming potential (GWP), favorable toxicity and very low photochemical reactivity. Its full chemical name is trans-1,3,3,3-tetrafluoropropene, also known as HFO-1234ze.

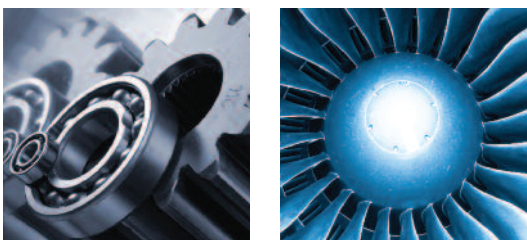
Key Facts About Solstice[®] Propellant (HFO-1234ze)

Applications:	Aerosol for industrial and personal care products
GWP:	Less than 1
Flammability:	Nonflammable per ASTM E681 and ISO 10156:2010
Designed to Replace:	134a, 152a, DME, butane, isobutane and propane
Solstice Propellant has a low MIR value and is not a volatile organic compound (VOC) as determined by the U.S. Environmental Protection Agency (EPA)	
Compatibility:	Exhibits good compatibility with plastics, elastomers and metals. In storage tests, it has been shown to be compatible with tinplate aerosol cans and lined aluminum cans. Valve compatibility tests have been run by Precision, Summit and Aptar
Stability:	Has been shown to be thermally and hydrolytically stable
Occupational Exposure Limit (WEEL):	800 ppm
Storage and Handling:	Solstice Propellant should be handled in a manner consistent with materials categorized as liquefied gases under pressure

Solstice Propellant Technical Specifications

Property	Solstice Propellant	
Molecular Formula	CHF=CHCF ₃	
Molecular Weight	114	
Boiling Point	-2.2°F	-19°C
Vapor Pressure at 70°F/21°C at 130°F/54°C	49 psig 147 psig	3.4 bars 10 bars
Liquid Density at 70°F/21°C	1.17 g/cc	
Vapor Flame Limits (Vol.% in Air) Measured at 70°F	None	
Solubility of Water in 1234ze at 68°F/20°C	225 ppm	
Solubility of 1234ze in Water at 68°F/20°C	373 ppm	
Dipole Moment (debye)	1.44	
Dielectric Strength (Vapor at 1 atm.)	11.7kV/0.1 inch	
Heat of Combustion	4385 BTU/lb.	10.2kJ/g
Heat of Vaporization @NBP	84 BTU/lb.	195kJ/kg

To learn more about Solstice Propellant, or to contact our technical and sales teams, please visit www.honeywell-solstice-propellant.com.



What is Solstice® Performance Fluid?

Solstice® Performance Fluid (PF) is a highly effective cleaning solution that is non-flammable, has favorable toxicity properties and an ultra-low global warming potential. Solstice PF is suitable for electronics, metal, medical and precision cleaning. Its full chemical name is trans-1-chloro-3,3,3-trifluoropropene, also known as HFO-1233zd. It can be used in degreasing equipment, and may be dispensed from an aerosol can.

Key Facts About Solstice® Performance Fluid (HFO-1233zd)

Applications:	Solvent for bulk and aerosol use
GWP:	1
Flammability:	Nonflammable per ASTM E681
Designed to Replace:	HFC-4310-mee (and blends), 7100 (and blends), nPB, perchloroethylene, trichloroethylene, HCFC-225
Solstice PF has a low MIR value and is not a volatile organic compound (VOC) as determined by the U.S. Environmental Protection Agency (EPA) and South Coast Air Quality Management District (SCAQMD)	
Compatibility:	Exhibits good compatibility with plastics and elastomers. Has been shown to be compatible with stainless steel, cold rolled steel, galvanized steel, copper, iron and aluminum with or without excess water
Stability:	Has been shown to be thermally and hydrolytically stable
Occupational Exposure Limit (WEEL):	800 ppm
Storage and Handling:	Solstice PF should be handled in a manner consistent with materials categorized as liquefied gases under pressure

Solstice Performance Fluid Technical Specifications

Property	Solstice PF
Chemical Name	trans-1-chloro-3,3,3-trifluoropropene
Molecular Formula	CF ₃ - CH = CClH
Molecular Weight	130
Boiling Point	66°F 19°C
Latent Heat of Vaporization at Boiling Point	83.4 BTU/lb 194 kJ/kg
Freezing Point	-161°F -107°C
Vapor Pressure at 68°F (20°C)	15.8 psia 109 kPa
Liquid Density at 68°F (20°C)	10.6 lb/gal 1.27 g/cc
Surface Tension at 68°F (20°C)	12.7 dyne/cm
Liquid Viscosity at 68°F (20°C)	0.503 cP
Solubility of Water in Solvent at 25°C	460 ppm
Solubility of Solvent in Water at 25°C	1900 ppm
KB Value	25

To learn more about Solstice PF, or to contact our technical and sales teams, please visit www.honeywell-solvents.com.

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June 2014 - SP-FP-203 version 16
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