



Opteon™ SF30

Specialty Fluid

Next Generation Low GWP Precision Cleaning Fluid

Technical Information

Introduction

Opteon™ SF30 is a proprietary azeotrope of hydrofluoroolefin (HFO) specialty fluid and trans-1,2-dichloroethylene. It is designed for use in ultra-low residue precision cleaning for highly demanding markets, such as aerospace, automotive, precision electronics, and optics, where failure is not an option.

Opteon™ SF30 is a safe, nonflammable, and environmentally friendly solvent with low global warming potential (GWP) (<2.5) and does not contain any fluorinated greenhouse gases (as listed in Annex 1 of the EU regulations 517/2014). Opteon™ SF30 can replace high GWP hydrofluorocarbon (HFC)- and hydrofluoroether (HFE)-based precision cleaning solvents, as well as HCFC-225, HCFC-141b, CFC-113, methyl chloroform (1,1,1-TCA), methylene chloride, perfluorocarbons (PFCs), chlorofluorocarbons (CFCs), and aqueous cleaners in many industrial applications.

Features and Benefits

- Superior cleaning performance with enhanced solvency power
- Fast drying with an optimum boiling point (29.1 °C [84.4 °F]), allows cleaned parts to be processed and used immediately
- High soil loading capacity boosts productivity by reducing equipment downtime associated with solvent change-outs
- Product maintains compositional stability during use (azeotrope)
- Maintenance free: No stabilizer maintenance required

- No surfactants needed: Removes extra washing steps to achieve residue-free cleaning
- Recyclable and reusable: Reduces cost of ownership and environmental footprint
- Nonflammable
- Low odor and toxicity
- Excellent environmental profile: Low GWP (<10), EU 517/2014 compliant

Typical Applications

- Precision cleaning
- Vapor degreasing
- Ultrasound cleaning
- Cold cleaning
- Oil, grease, and silicone removal
- Aerosol solvent*
- Particle removal
- Heat transfer fluid for chillers, heat pipes, and vapor chambers

*Not available for use in European Union; certain restrictions apply. Contact Chemours or your local technical representative for additional information.



Chemours™

Table 1. Physical Properties

Property	Units	Opteon™ SF30	SOLKANE 365mfc
Boiling Point	°C	29.1	40.2
	°F	84.4	104.4
Liquid Density ⁽¹⁾	g/cm ³	1.33	1.27
	lb/gal	11.1	10.6
Saturated Vapor Density ⁽¹⁾	kg/m ³	5.09	6.98 ⁽²⁾
	lb/ft ³	0.32	0.44 ⁽²⁾
Surface Tension ⁽¹⁾	dyn/cm	16.4	N.D.
Vapor Pressure ⁽¹⁾	kPa	86.3	53 ⁽²⁾
	psia	12.5	7.7 ⁽²⁾
Viscosity ⁽¹⁾	cP	0.33	0.45 ⁽²⁾
Freezing Point	°C	<-80	-35
	°F	<-112	-31
Molecular Weight	g/mole	139.6	148.1
Kb Value		20	13
Heat Capacity ⁽¹⁾	kJ/kg·°C	1.19	N.D.
Liquid Thermal Conductivity ⁽¹⁾	mW/m·K	84.2	10.3
Vapor Flammability in Air			
Lower Limit	vol%	None	3.6
Upper Limit	vol%	None	13.3

⁽¹⁾Values reported are at 25 °C (77 °F). ⁽²⁾Values reported at 20 °C (68 °F), unless otherwise specified. N.D. refers to no reference data available. All data compiled was furnished from publicly available sources.

Table 2. Density and Vapor Pressure Change with Temperature

Temperature (°C)	Vapor Pressure (kPa)	Density (g/cm ³)
0	30.30	1.38
10	47.44	1.36
20	71.57	1.33
30	104.56	1.31
40	148.47	1.28
50	205.59	1.26
60	278.42	1.23

Cleaning Process

Opteon™ SF30 has broad range cleaning capabilities. It is ideally suited for use in precision cleaning, vapor degreasing, and ultrasonic cleaning. **Table 3** lists some typical soils that can be cleaned with Opteon™ SF30.

Contact Chemours to initiate a cleaning trial in one of our regional cleaning laboratories or obtain a sample for on-site testing.

Table 3. Soils Cleaned with Opteon™ SF30

Cutting Oils	Hydraulic Oils
Mineral Oils	Waxes
Gear Oils	Vacuum Oils
Heavy Greases	Stamping Oils
Fluorinated Oils	Refrigerant Oils
Silicone Oils	Silicone Greases

Materials Compatibility

Opteon™ SF30 is characterized by good compatibility with a wide selection of metals, for example, stainless steel, copper, brass, and aluminum. Opteon™ SF30 is compatible with most plastics and elastomers, as shown in **Table 4**. Individual plastic and elastomeric formulations can vary with the manufacturer; therefore, the best assurance of material compatibility can be recommended after testing under conditions expected during normal operation. Contact your local technical representative for specific material compatibility concerns.

Table 4. Plastics/Elastomers Compatibility*

Plastics		Elastomers	
Compatible	Incompatible	Compatible	Incompatible
Polyethylene	Polystyrene	Teflon™	Silicone
Polypropylene	Polycarbonate	Kalrez	Hypalon
Teflon™	ABS	Ryton	EPDM Rubber
Polyester	Polyacrylate	PTFE w/EPDM	Viton™
Nylon	Acrylic (PMMA)	PTFE w/Neoprene	Buna N
FEP/PFA	Polysulfone	Parafluor	Fluorosilicone
Halar			
Kynar			

*Material composition varies depending upon compounding agents, plasticizers, processing, etc. Specific materials should be tested for compatibility with solvent prior to use.

Safety, Toxicity, and Environmental

Opteon™ SF30 exhibits no closed, open cup flash point or vapor flammability limits. Opteon™ SF30 is classified as a nonflammable liquid by NFPA and DOT. Safety, toxicity, and environmental data are shown in **Table 5**.

Table 5. Safety, Toxicity, and Environmental Properties

Property	Units	Opteon™ SF30
Flash Point, OC, ASTM D1310	°C (°F)	None
Flash Point, CC, ASTM D56	°C (°F)	None
Vapor Flammability in Air		
Lower Limit	vol%	None
Upper Limit	vol%	None
Ozone Depletion Potential	-	Negligible
Global Warming Potential	-	<2.5
Volatile Organic Compounds (VOCs)	g/L	335
Occupational Exposure Limit, 8-hr TWA	ppm	425

Storage and Handling

Opteon™ SF30 is thermally stable and does not fractionate, oxidize, or degrade during storage. It is recommended to store containers in a clean and dry area, and protect them from freezing and excessive temperatures of 48 °C (118 °F). When stored properly, an unopened package has an indefinite shelf life. Package sizes for Opteon™ SF30 are 208 L (55 gal) drums and 19 L (5 gal) pails.

For additional information on Opteon™ SF30 or other specialty fluids products by Chemours, please visit vertrel.com or call 800-969-4758.

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