



Halocarbon Engineered Fluids

Product Data Sheet for Oils, Greases, and Waxes

Polychlorotrifluoroethylene (PCTFE) | CAS Registry Number: 9002-83-9

Halocarbon Engineered Fluids are oils, greases, and waxes made from polychlorotrifluoroethylenes (PCTFE), and are offered in a wide range of viscosities. They are nontoxic, nonreactive, nonflammable and chemically inert fluorinated lubricants and performance fluids that are used in various hazardous applications from oxygen service to highly acidic environments.

Typical Properties of Halocarbon Oils, Grease, and Waxes

Typical Properties: Halocarbon Oils

Oil ¹	0.8	1.8	4.2	6.3	27	56	95	200	400	700	1000N
Flash and Fire Points	None										
Pour Point² °F (±10°F) °C (±5°C)	-200 -129	-135 -93	-100 -73	-95 -71	-40 -40	-30 -34	-15 -26	10 -12	15 -9	40 5	50 10
Cloud Point³ °F (±10°F) °C (±5°C)	<-200 <-129	<-135 <-93	<-125 <-87	<-125 <-87	<-95 <-71	-30 -34	-5 -21	35 2	50 10	55 13	56 18
Viscosity⁴ (±10%)											
@ -65°F (-54°C)											
Centistokes	5.7	143	---	---	---	---	---	---	---	---	---
Centipoises	10	271	---	---	---	---	---	---	---	---	---
@ 100°F (37.8°C)											
Centistokes	0.8	1.8	4.2	6.3	27	56	95	200	400	700	1000
Centipoises	1.3	3.5	7.8	12	51	108	182	390	780	1365	1950
@ 160°F (71.1°C)											
Centistokes	0.54	1.1	1.9	2.6	6.8	11	16	26	40	62	83
Centipoises	0.89	1.9	3.4	4.7	13	21	30	49	75	118	158
@ 210°F (99°C)											
Centistokes	---	0.8	1.2	1.6	3.1	4.9	6.3	9	12	17	22
Centipoises	---	1.4	2.1	2.8	5.6	8.9	12	16	22	32	41
Density⁵ (±0.01 g/mL)											
100°F (37.8°C)	1.71	1.82	1.85	1.87	1.90	1.92	1.92	1.95	1.95	1.95	1.95
160°F (71.1°C)	1.65	1.76	1.80	1.82	1.85	1.87	1.87	1.89	1.89	1.90	1.90
210°F (99°C)	1.60	1.71	1.75	1.77	1.81	1.82	1.82	1.85	1.85	1.86	1.86
Refractive Index n _D ²⁰ (typical)	1.383	1.395	1.401	1.403	1.407	1.409	1.411	1.412	1.412	1.414	1.415

1. Same oil grades followed by "S" indicate rust inhibitor has been added. Oil is still oxygen compatible.

2. ASTM D97
3. ASTM D2500

4. ASTM D445
5. Gay-Lussac pycnometers or equivalent

Thermal Stability: The thermal stability of Halocarbon oils extends up to the decomposition temperature of the carbon chain. These compounds are subject to thermal cracking above 580°F (304°C) with rapid breakdown occurring above 620°F (327°C) into volatile compounds. The maximum recommended safe operating temperature is 400°F (204°C). Applications above 300°F (150°C) should be evaluated prior to use.

Caution: Halocarbon Engineered Fluids should not be used in contact with sodium or potassium metal, amines, amine additives (antioxidants, etc.), liquid fluorine, or liquid bromine trifluoride. Caution should be used with aluminum, magnesium, and their alloys under conditions of significant tribological contact.

Properties: Halocarbon Greases

PCTFE Grease	Consistency		Service Temperature	Minimum Drop Melting Point	Description
	NLGI	ASTM Penetration			
Silica-Thickened Greases					
28I	2	265 - 295	0 to 250°F -20 to 120°C	None	Basic silica-thickened grease. This product contains a rust inhibitor.
28LTI	2	265 - 295	-50 to 200°F -45 to 95°C	None	For low temperature applications. This product contains a rust inhibitor.
25-5S	3	220 - 250	0 to 350°F -20 to 175°C	None	Lowest vapor pressure. Available with a rust inhibitor (25-5SI), which has a recommended service temperature of 0 to 250°F (-20 to 120°C).

Note: Grades with an "I" designation contain rust inhibitor

PTFE-Thickened Grease

MT-3I	3	220 - 250	0 to 350°F -20 to 175°C	None	Ideal as a thread sealant to prevent galling. This product contains a rust inhibitor
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Note: Grades with an "I" designation contain rust inhibitor

PCTFE Polymer-Thickened Greases*

25-10M	1	310 - 340	30 to 275°F 0 to 135°C	300°F 150°C	Softest grease for wide temperature range. Available with rust inhibitor (25-10MS).
X90-10M	1	310 - 340	-40 to 200°F -40 to 95°C	300°F 150°C	For low temperature applications. Available with rust inhibitor (X90-10MS).
25-20M	4	175 - 205	20 to 300°F -5 to 150°C	320°F 160°C	Hardest grease with broad temperature range

Note: Grades with an "S" designation contain rust inhibitor

* This table gives typical properties (not specifications) based on historical production performance. Halocarbon Products Corporation does not make any express or implied warranty that these products will continue to have these typical properties.

Properties: Halocarbon Waxes

Wax		40	600	1500
Minimum Drop Melting Point ¹	°F	---	135	280
	°C	---	57	132
Viscosity ²	Centistokes (±10%) @ 160°F (71.1°C)	190	1000	---

1. ASTM D127

2. ASTM D445



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