Krytox™
Performance Lubricants

NRT Series for Reactive Gas Service

Product Information

The NRT series of Krytox™ oils and greases deliver non-reactive, nonflammable, long-lasting performance, even under the demanding temperatures and pressures of reactive gas service. Krytox™ NRT lubricants are compatible with oxygen and other reactive chemicals, and are extremely resistant to water washout. Krytox™ NRT lubricants are also compatible with polymers used in seals, O-rings, and valves.

The superior film-forming capability of Krytox™ lubricants provide a thick oil layer that reduces friction and wear, extending equipment life in severe duty applications. The non-oxidizing nature of the oils makes the greases last longer. The oils don't gum up as they age; so, they won't harden the greases and cause catastrophic failure.

Krytox™ oils and greases are perfluoropolyether (PFPE) lubricants—also called perfluoroalkylether (PFAE) or perfluoropolyalkylether (PFPAE). Many of the NRT series of Krytox™ greases are thickened with a unique polytetrafluoroethylene (PTFE) with the formula $(CF_2\text{-}CF_2)n$. This special high efficiency thickener has a melting point of 325 °C (617 °F), low molecular weight, and submicron (0.2 µm) particle size.

Krytox™ NRT 8904 and **NRT 8906** provide excellent lubrication options for valves, regulators, seals, and pump and motor bearings at a wide range of operating conditions.

Krytox™ NRT 8906A provides rust protection at ambient temperatures, corrosion protection at high temperatures, and antiwear protection. This white grease, containing a patented soluble anti-corrosion additive, is designed for bearing applications where anti-corrosion protection is required.

Krytox™ NRT 8908 grease is a special high-pressure oxygen paste with excellent lubrication over a broad temperature range. This product has been formulated with special oils and thickeners for use in the high-pressure oxygen industry. Krytox™ NRT 8908 received a rating of 350 bar at 60 °C (140 °F) in the BAM oxygen reactivity test, making it a great choice for valves in high pressure service.

Krytox™ NRT 8950 is an extreme high-temperature grease with low oil evaporation. The special non-melting high temperature thickener in Krytox™ NRT 8950 also provides extreme pressure properties and works as a solid lubricant if the base oil is depleted. The base oil provides good viscosity and lower evaporation at high temperatures. The grease is slightly tacky and will provide extra bonding to the surface. Krytox™ NRT 8950 received a rating of 180 bar at 60 °C (140 °F) in the BAM oxygen reactivity test.

Krytox™ NRT 8990 is a linear PFPE grease providing low volatility characteristics for longer lubricant life. The base oil has a high viscosity index to provide effective lubrication over a wider temperature range, making it a great choice for liquid oxygen service. Krytox™ NRT 8990 is formulated using a patented soluble anti-corrosion additive that helps reduce noise, rusting, and wear; thus, extending grease, bearing and component life.

Krytox™ NRT PLSS is recommended for use in applications requiring an H-1 rated lubricant.

Krytox™ NRT 8805 is a clear, colorless oil for use in vacuum pumps and oxygen compressors. It has been precisely distilled to provide low vapor pressures and superior performance when compared to conventional vacuum pump oils, which may cause safety, waste disposal, and maintenance problems. Krytox™ NRT 8805 also contains a patented soluble additive to offer anti-rust protection and improved performance properties.

Product Properties of Krytox™ NRT Series

Typical Properties	NRT 8904	NRT 8906	NRT 8906 A	NRT 8908	NRT 8950	NRT 8990	NRT PLSS	NRT 8805
Description	White, creamy grease	White, creamy grease	White, creamy grease	Light gray, creamy paste	White, creamy grease	White, creamy grease	White, creamy grease	Clear, colorless oil
NLGI Grade	2	2	2	2	1.5	1	2	—
Thickener	PTFE	PTFE	PTFE	Inorganic	Non-melting	PTFE	PTFE	—
Estimated Useful Temperature Range, °C (°F)	–51–179 (–60–354)	–36–260 (–33–500)	–36–200 (–33–392)	–40–180 (–40–356)	–15–325 (5–617)	–75–150 (–103–302)	–36–260 (–33–500)	–40–160 (–40–320)
Oil Viscosity, kinematic cSt, ASTM D445, °C (°F)								
40 (104)	60	240	240	49	500	15	240	81
100 (212)	9	25	25	7.2	47	3.7	25	11
204 (399)		4	4				3.9	
Oil Density, g/mL	1.93	1.95	1.95	2.0	1.95	1.9	1.95	1.9
Max. Oil Volatility, % in 22 hr, ASTM D972, °C (°F)								
66 (151)	1							
121 (250)	3	1	1	2		8	1	1
204 (399)		<5	<6		<1		<5	
260 (500)					2.1			

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Replaces: K-17396-3
C-10395 (11/20)