

NRT Series Delivers Safe Operations in Reactive Gas Service

Product Information

The Problem

Oxygen and other reactive chemicals, such as chlorine, fluorine, and bromine, react with conventional lubrication technologies that use mineral oils or synthetics. This increases the potential for explosion, fire, deterioration of lubricants, and equipment failure. This chemical reaction with standard lubricants can result in:

- Accelerated decomposition of hydrocarbon lubricants
- Bearing failure, due to tars and varnishes
- Reaction with additives, leading to degradation and reduced lubricant life
- More frequent lubrication
- Need for explosion-proof barriers and nitrogen purge to keep non-compatible lubricants below explosive limits
- Costly, cumbersome equipment with interlocks that can fail
- Risk of compression auto-ignition when standard lubricants make contact with an oxygen surge
- Lubrication system failure from oxidation, harsh chemical or solvent attack, flammability, and volatilization of the oil base of standard lubricants

The Solution

Krytox™ NRT oils and greases are designed specifically for critical oxygen service equipment, where failure is not an option. With more than 40 years of experience, Chemours offers lubricants that meet the demanding needs of oxygen and reactive gas applications. Krytox™ technology delivers:

- Safety in use with oxygen and other chemicals, including fluorine, chlorine, bromine, and HF
- Nonflammability that may allow elimination of auxiliary systems to prevent fire and explosion
- Extended equipment life

- Grades of Krytox™ oil and grease available for every oxygen and compressed gas lubrication requirement
- Robust, soluble, anti-wear/anti-corrosion performance
- No auto-ignition at temperatures up to 482 °C (900 °F) in oxygen
- No ignition at pressures up to 350 bar

Demonstrated Results

Krytox™ technology provides state-of-the-art performance for mechanical systems under harsh conditions. From gearboxes, bearings, and chains to seals, actuators, valves, and more, every day Krytox™ serves the specialized needs of:

- Pulp and paper mills, and converting plants
- Automotive components
- Military and commercial aircraft
- Chemical plants
- Power plants
- Turbine generators
- Oxygen, chlorine, and reactive gas equipment and components

Krytox™ lubricants have been independently tested by organizations, such as BOC, Air Liquide, BAM, NASA, General Dynamics, and Praxair, and proven acceptable for oxygen and other reactive chemical compatibility.

Improve the Safety and Performance of Your Oxygen System Now

Krytox™ NRT series oils and greases may offer the ideal solution to improve the safety and reduce the complexity of lubricating your oxygen and reactive chemical equipment. The use of Krytox™ lubricants can provide safe operation for all mechanical components.

Krytox™ NRT Series Lubricants for Oxygen and Reactive Chemistry Compatibility

Application	Lubricant Grade	Optimal Temperature Range	ISO Viscosity	Properties
Valves, Regulators	Krytox™ NRT 8904	-51–179 °C (-60–354 °F)	60	Safe in all reactive gases, including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases. Compatible with seal and O-ring materials.
	Krytox™ NRT 8906	-36–260 °C (-33–500 °F)	240	
	Krytox™ NRT 8908	-40–180 °C (-40–356 °F)	46	Safe for use in extreme high pressure applications. 350 bar BAM rating.
	Krytox™ NRT PLSS	-36–260 °C (-33–500 °F)	240	NSF H1 approved.
Pump and Motor Bearings	Krytox™ NRT 8904	-51–179 °C (-60–354 °F)	60	Safe for use with reactive gases. Won't wash out. Compatible with seal and O-ring materials.
	Krytox™ NRT 8906A	0–200 °C (32–392 °F)	240	Safe for use with common acids, bases, solvents, and reactive gases. Won't wash out from water, steam, or solvents. Compatible with seals and O-rings.
	Krytox™ NRT 8990	-75–150 °C (-103–302 °F)	15	Linear PFPE grease with high viscosity index to provide effective lubrication over a wider temperature range, making it a great choice for liquid oxygen service.
	Krytox™ NRT 8950	100–325 °C (212–617 °F)	500	Extreme high temperature grease. Safe for use with common acids, bases, solvents, and reactive gases. 180 bar BAM rating.
High Pressure Applications	Krytox™ NRT 8950	-15–325 °C (5–617 °F)	500	Extreme high temperature grease. 180 bar BAM rating.
	Krytox™ NRT 8908	-40–180 °C (-40–356 °F)	46	Safe for use in extreme high pressure applications. 350 bar BAM rating.
Thread Lubricant and Sealant	Krytox™ NRT 8906	-36–260 °C (-33–500 °F)	240	Safe in all reactive gases, including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases.
	Krytox™ NRT 8908	-40–180 °C (-40–356 °F)	46	Safe for use in extreme high pressure applications. 350 bar BAM rating.
	Krytox™ NRT PLSS	-36–260 °C (-33–500 °F)	240	NSF H1 approved.
Compressor Oil	Krytox™ NRT 8805	-40–160 °C (-40–320 °F)	81	Safe for use with common acids, bases, solvents, and reactive gases. Compatible with common seals.
Vacuum Pump Fluid	Krytox™ NRT 8805	-40–160 °C (-40–320 °F)	81	10 ⁻⁷ torr vapor pressure; compatible with all chemicals.
O-Rings	Krytox™ NRT 8906	-36–260 °C (-33–500 °F)	240	Safe in all reactive gases, including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases. Compatible with seal and O-ring materials.

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Replaces: K-15481-4
C-10771 (11/20)