

# DuPont™ Krytox® Technology Sets the Standard for Safe Use in Equipment with Oxygen and Other Reactive Chemistry

## 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® technology is designed specifically for critical oxygen service equipment where failure is *not* an option. With more than 40 years of experience, DuPont supplies a lubricant in every format—Krytox® oils and greases and now new Vydax® 960 dry film—to meet the demanding needs in oxygen and reactive gas applications. Krytox® technology delivers:

- 100% compatibility with oxygen
- Nonflammability that may allow elimination of auxiliary systems to prevent fire and explosion
- Extended equipment life
- Safe in use with other oxidizing chemicals, including fluorine, chlorine, bromine and HF
- Grades of Krytox® oil and grease available for every oxygen and compressed gas lubrication requirement
- First robust, soluble, anti-wear/anti-corrosion additive, DuPont's patented and proprietary Krytox® XP, raising the bar for oxygen compatible lubricant protection in cryogenic applications
- Peace of mind from testing at temperatures of more than 900°F in the presence of oxygen with *no* ignition and at pressures above 345 bar with *no* impact

## 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

DuPont lubricants have been independently tested by companies such as BOC, Air Liquide, BAM, NASA, General Dynamics and VOX and proven acceptable for oxygen and other reactive chemical compatibility.

### IMPROVE THE SAFETY AND PERFORMANCE OF YOUR OXYGEN SYSTEM NOW

Krytox® and Vydax® may offer the ideal solution to improve the safety and reduce the complexity of lubricating your oxygen and reactive chemical equipment. The use of DuPont lubricants can provide safe operation for all mechanical components. Call us today at (800) 424-7502 or visit [www.krytox.com](http://www.krytox.com) for more information on solving your most difficult lubrication problems.



*The miracles of science™*

## DuPont Lubricants for Oxygen and Reactive Chemistry Compatibility

Application	Lubricant Grade	Optimal Temperature Range	ISO Viscosity	Properties
Valves	Krytox® GPL 202	-80°F to +200°F	15	Safe in all reactive gases including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases.
	Krytox® GPL 204	-30°F to +300°F	68	
	Krytox® GPL 206	+40°F to +500°F	220	
Pump and Motor Bearings	Krytox® GPL 222	-80°F to +200°F	15	Very low temperature. Safe for use with common acids, bases, solvents and reactive gases. Won't wash out. Compatible with all seals.
	Krytox® GPL 224	-30°F to +300°F	68	Safe for use with common acids, bases, solvents and reactive gases. Won't wash out from water, steam or solvents. Compatible with all seals.
	Krytox® GPL 226	+40°F to +500°F	220	
	Krytox®XHT-ACX	+50°F to +575°F	680	Very high temperature grease. Safe for use with common acids, bases, solvents and reactive gases. Won't wash out from water, steam or solvents.
	Krytox® XHT-BDZ	+550°F to +725°F	1000	Extreme high temperature grease. Safe for use with common acids, bases, solvents and reactive gases.
Regulators	Krytox® GPL 204	-30°F to +300°F	68	Safe in all reactive gases including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases.
	Krytox® GPL 206	+40°F to +500°F	220	
High Pressure Applications	Krytox® XHT-BD	+40°F to +600°F	500	180 bar BAM rating
	Krytox® TLF 8908	-40°F to +350°F	46	350 bar BAM rating
Thread Lubricant and Sealant	Krytox® GPL 206	-30°F to +500°F	220	Safe in all reactive gases including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases.
Mil Spec	Krytox® 240 AC	-30°F to +550°F	220	Mil-PRF-27617, Type 3, fuel and oxygen resistant
Compressor Oil	Krytox® GPL 104	-30°F to +300°F	68	Safe for use with common acids, bases, solvents and reactive gases. Compatible with common seals.
Vacuum Pump Fluid	Krytox® VPF 1514	-50°F to +260°F	46	10 <sup>-7</sup> torr vapor pressure, compatible with all chemicals
Gear Oil	Krytox® XP1A4	-30°F to +300°F	68	Safe for use with common acids, bases, solvents and reactive gases.
	Krytox® XP1A6	+40°F to +380°F	220	
Mechanical Seal Barrier Fluid	Krytox® TLF 8996	-50°F to +200°F	7	Safe in all reactive gases including oxygen, chlorine, fluorine, bromine. Won't react with acids or bases.
Dry Film Lubricant	Vydax® 960	In reactive environment useful temperature range: -297°F to 77°F. For non-reactive environment: 482°F is the maximum temperature.	NA	Compatible with most seals. Aerosol.

**For more information or technical assistance, call: (800) 441-9503**

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K-15481 (3/06) Printed in the U.S.A.

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