Krytox™
Performance Lubricants

MIL-PRF-27617 Greases—Grease, Aircraft and Instrument, Fuel- and Oxidizer-Resistant

Product Information

Krytox™ aerospace oils and greases are based on perfluoropolyether (PFPE) oils. These synthetic fluorinated lubricants are used in extreme conditions, such as continuous high temperatures up to 316 °C (600 °F) and higher temperatures for shorter periods, depending on product grade limits. Chemically inert and safe for use around hazardous chemicals, these lubricants are nonflammable and are safe for use in oxygen service. Krytox™ oils and greases are silicone free and do not damage plastics or elastomers, nor cause corrosion to metals. They are commonly used as lubricants in aerospace, automotive, industrial, and semiconductor applications, as well as solving many other routine lubrication problems.

Krytox™ greases are the original products that this military specification was written for and have been certified continuously since the specification was originally written.

This is the latest data from the recertification that is required every five years. Krytox™ greases are standard as NLGI Grade 2 penetration. If Krytox™ 240 AZ is ordered to meet MIL-SPEC requirements, it must be ordered as NLGI Grade 1 to meet the specification.

Typical Applications

Applications for Krytox™ lubricants are generally of a critical nature with temperatures in all industries reaching extremes for conventional lubricants. They are expected to be durable in the most aggressive environments and are now often considered an integral part of the design. Where failure of components is not an option, whether because of durability, warranty, safety, loss of productivity, or down time, Krytox™ is the lubricant of choice in a wide range of industries and applications.

In the aerospace industry, Krytox™ oils and greases are applied on various settings, spanning from bearings and sealants to O-rings and oxygen systems. Krytox™ is a valuable asset to the aerospace industry, due to its superior performance in a wide range of temperatures scaling from −73 to 316 °C (−100 to 600 °F). In addition, it is robust in harsh environments and has excellent frictional properties, allowing it to resist change in properties over time, provide longer wear, and lower energy consumption. Krytox™ lubricants are compatible with all metals, elastomers, plastics, paints, and finishes. Due to the intense and severe circumstance of the aerospace industry, it can be expected that Krytox™ delivers a high level of product excellence.

Krytox™ 240 AC, 240 AB, and 240 AZ Grade 1 greases now have NSF approval for incidental food contact (H-1) in and around food processing areas.

Preparation Before Packing Bearings With Grease

New bearings and equipment that are not lubricated often have rust preventive oils in them to prevent damage while they are in storage before use. New bearings should be inspected for damage and cleanliness before use. The greases or preservative oils need to be removed when using Krytox™ as a lubricant. Failure to do so could result in reduced bearing life. Bearing life tests on uncleaned bearings have shown reduced life in high temperature, high speed tests, where the bearing was filled with a minimum amount of grease. The preservatives coat the metal surface to prevent rusting, so they can also prevent the grease from adhering, causing them to be thrown off by the action of the bearing. They also will oxidize and harden, and can create debris that will contaminate the grease.

Storage and Shelf Life

Krytox™ grease and oil lubricants have an indefinite shelf life, if unopened and stored in a clean dry location.

CAGE No.: 7GFT8
NAICS Code: 324191 Lubricating Oils and Greases Manufacturing
SIC Code: 2992 Lubricating Oils and Greases
DUNS: 079950093

Property	Krytox™ Grade 240 AZ	240 AB	240 AC	FPG 028
Qualification Reference Number	AFPET/PTPT 18-007	AFPET/PTPT 18-008	AFPET/PTPT 18-009	AFPET/PTPT 12-003
Grease Type/MIL-PRF-27617 Specified Operating Range, °C (°F)	Type I/–54 to 149 (–65 to 300)	Type II/–40 to 204 (–40 to 400)	Type III/–34 to 288 (–30 to 400)	Type IV/-73 to 204 (–100 to 400)
Krytox™ Useful Range, °C (°F)	–57 to 149 (–71 to 300)	–40 to 232 (–40 to 450)	–34 to 288 (–29 to 550)	⩽69 to 204 (–92 to 399)
NATO Number	G-397	G-398	G-399	G-1350
Penetration Grade	NLGI 1	NLGI 2	NLGI 2	NLGI 2
Change in Worked Penetration (30 max.)	+13	+3	–3	+1
Corrosion on Copper (2b max.)	1b	1b	1b	1b
High Temperature Bearing Performance (500 hr min. at 10,000 RPM, 204 °C [399 °F])	—	Stopped at 1,320 hr	Stopped at 1,685 hr	1,691 hr
Evaporation, ASTM D 2595 (22 hr at 204 °C [399 °F]), %	12.9	10.1	0.2	6.61
Oil Separation (30 hr, 204 °C [399 °F]), wt%	—	14.2	15.5	14.25
Solubility in Fuel (20% max.), %	—	0.3	0.1	0.1
Liquid Oxygen Impact Sensitivity 20 impacts at 43.3 in, no reaction	No Reaction	No Reaction	No Reaction	No Reaction
Low Temperature Torque, g-cm at –73 °C (–99 °F) (max.) ASTM D1478 Start 2800 Run 800				 Start 1524 Run 364
Water Washout Characteristics (20% max.), %	—	0.25	—	0.32
Oxidation Stability (5 max.), psi	—	0.5	—	—
Dirt Count 75 µ and larger (0 per cc max.) 25 to 74 µ (1000 per cc max.)	 0/26	 0/0	 0/0	 0/45
Resistance to Aqueous Solution Distilled Water 50/50 Distilled Water/Ethanol	 Pass Pass	 Pass Pass	 Pass Pass	 Pass Pass
Film Stability and Corrosion on Steel	Pass	Pass	Pass	Pass
Base Oil Viscosity, 40 °C (104 °F), cSt	22.8	77.8	243	50.5
E595 Test*	—	—	Pass	—

Note: These values are typical properties and not specifications.
*E595 criteria to pass is <1% for Total Mass Loss and <0.1% for Collected Volatile Condensable Material.

For product information, industry applications, technical assistance, or global distributor contacts, visit krytox.com or within the U.S. and Canada, call 1-844-773-CHEM/2436 or outside of the U.S., call 1-302-773-1000.

Replaces: K-20068-3
C-10065 (10/18)