PFPE 501 GREASE

High Temperature Lubricating Vacuum Grease, Inert

Description

Apiezon PFPE 501 is a high performance lubricant and sealant which can be used with confidence in extreme environments, ultra high vacuum conditions and in the presence of gaseous and liquid oxygen at elevated temperatures.

The branched perfluoropolyether base oil and PTFE thickener facilitate the grease's excellent lubricity and chemical inertness across its temperature range. In harsh environments PFPE 501 can be relied upon to perform up to 250°C in the presence of a range of aggressive chemicals including halogens, alkalis, fuels, corrosives and fuming nitric acid.

Being extremely resistant to solvents it is ideal for use in coating, semiconductor and other industries where aggressive chemicals and strong oxidising agents are regularly used.

Advantages of using PFPE 501

- **Robust** - Chemical inertness and oxidation stability make PFPE 501 ideal under the most extreme operating conditions.
- **Safe & Reliable** - Non-toxic, non-flammable and maintains lubricity and thermal stability up to 250°C.
- **Extends Service Life** - Branched PFPE structure and double-density provides film-forming and superior load-carrying capability.
- **Versatile** - Used in a wide range of applications including bearings, valves, gears, threads, o-rings and seals.
- **Food Grade Certified** - Having the NSF H1 classification confirms that Apiezon PFPE 501 can be used safely in the food production chain where incidental food contact may occur. The content in the final product must not exceed 10ppm (parts per million) in order for it to be deemed fit for consumption.

Apiezon PFPE 501

- PFPE based
- High temperature lubricant
- Used in oxygen rich environments
- Ultra high vacuum
- Chemically inert
- Extreme pressure
- Wide temperature range

Benefits

- Extended equipment life
- NSF H1 food grade certified
- Reduced equipment downtime
- Lower service costs
- Life-time lubrication
- Guaranteed Apiezon quality
- Expert technical support

NSF

Nonfood Compounds H1

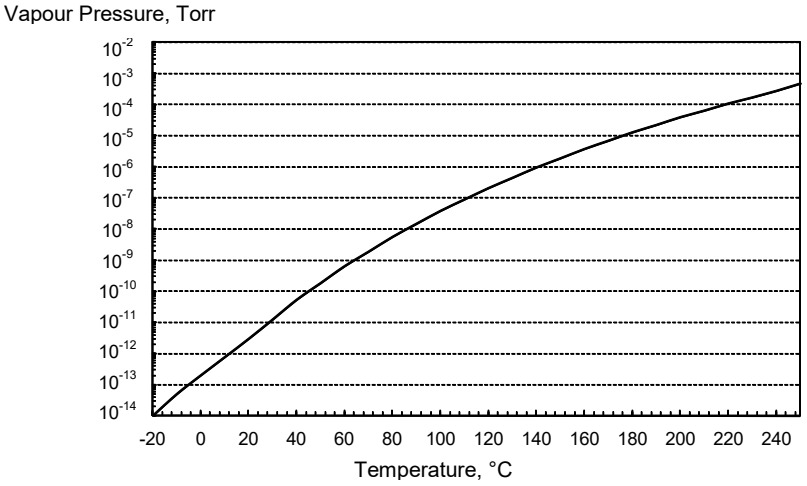
Ultra High Vacuum

The extremely low vapour pressure characteristics of PFPE 501 (as demonstrated in the graph below) ensure the grease can be used with confidence under ultra high vacuum conditions.

Cleaning

Wipe off excess grease with a lint-free cloth. Residual grease can be removed using a perfluorinated solvent. For stringent cleanliness a further stage using acetone is recommended.

Vapour pressure over working temperature range



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Compatibility

Apiezon PFPE 501 is compatible with many types of material including plastics, metals, ceramics, polymers, elastomers ethers, alcohols and hydrocarbons.

However temperatures greater than 250°C should be avoided, as should contact with aluminium and magnesium in powder form above 200°C. At temperatures above 100°C it is also recommended to avoid contact with Lewis acids and newly exposed rubbing surfaces of aluminium, magnesium or titanium alloys.

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Shelf life

The shelf life of Apiezon PFPE 501 is ten years from date of manufacture, providing the product is in the original unopened packaging and has been stored at ambient (10 to 30°C) temperature.

Typical Properties

NLGI No.		2
Penetration P60		280
Typical working temperature range	*°C*	-15 to 250
	°F	5 to 482
Vapour pressure @ 25°C / 77°F, Torr		1.3×10^{-12}
Relative density @ 25°C / 77°F		2.003
4 ball weld point (load), kg - ASTM D2596		800
4 ball wear scar, mm - ASTM D2266 (40kg)		0.94
Outgassing characteristics - ASTM.E 595		
TML		<1%
CVCM		<0.1%
Evaporation 24hrs @ 100°C / 212°F		0.02%
Oil separation 24hrs @ 100°C / 212°F		2.10%
Low temperature torque, g/cm		
25°C / 77°F Starting		162.3
25°C / 77°F Running		64.4

All properties quoted in this table are typical values and do not constitute a specification.