



ULTRATHERM 2000

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ULTRATHERM 2000 is an ultrahigh vacuum grease down to 10^{-9} mbar based on perfluorinated polyethers. These oils are completely saturated and are showing optimum oxidation and thermal stability.

Special properties

- Ultrahigh vacuum grease down to 10^{-9} mbar
- High thermal stability and oxidation resistance
- High load carrying capacity
- High chemical resistance, non-combustible
- Low evaporation losses
- No swelling of plastomers and elastomers
- Compatibility with most metals at a wide temperature range
- Resistant to radioactive radiation

Product Characteristics	Value	Dimension	Norm / Standard
Colour	white		
Density at 20°C	1,89	g/cm ³	DIN 51757
Operating temperature range	-60 to 260	°C	
Thickener	PTFE		
Base oil	PFPE		
Kin. viscosity of the base oil at 40°C	158	mm ² /s	DIN EN ISO 3104
Kin. viscosity of the base oil at 100°C	48	mm ² /s	DIN EN ISO 3104
Worked penetration	265 – 295	mm/10	DIN ISO 2137
Consistency class (NLGI)	2		DIN 51818
Dropping point	none	°C	DIN ISO 2176
Resistance to water	0 – 90		DIN 51807
Speed factor of grease (n x dm)	300 000	mm/min	
Four-ball test O.K. load / welded load	8500 / 9000	N	DIN 51350
Outgassing rate TML Total Mass Loss	0,08	%	ECSS-Q-70-02 A (ASTM E 595-90)
Outgassing rate CVC Collected Volatile Condensable Material	0,01	%	ECSS-Q-70-02 A (ASTM E 595-90)
Outgassing rate RML Recovered Mass Loss	0,07	%	ECSS-Q-70-02 A (ASTM E 595-90)
Resistance to radioactive radiation	5 x 10 ⁶	Gy (=10 ² rd)	

Application

ULTRATHERM 2000 is a lubricating and sealing grease in the ultrahigh vacuum. **ULTRATHERM 2000** is used, if operating temperatures, chemical and/or physical influences and the aim of the life-time lubrication excludes the use of conventional or other special greases. Prior to the initial lubrication with **ULTRATHERM 2000** it is mandatory to clean surfaces thoroughly with special detergents such as **TURMOTEMPOIL 480**, acetone, isopropyl-alcohol or similar products. Optimum lubricating properties can only be fully achieved on clean and dry material surfaces.

Application-specific operating temperatures of up to 280°C are possible. At operating temperatures above 260°C, aggressive decomposition products (e.g. hydrofluoric acid) can form.

Packaging units

100 g tube, 190 g tube, 0,5 kg can, 800 g cartridge, 1 kg can, 5 kg bucket, 10 kg hobstock, special packing on request

The products are subject to continuous strict production controls and comply with our own factory specifications. A warranty for each case cannot be given, due to the variety of relevant factors. Therefore, we recommend the implementation of field tests. Herewith, any liability is expressly excluded.

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