

THERMEX™

Introduction

Petro-Canada's THERMEX grease is a premium specialty grease formulated to provide long bearing life in moderately loaded, high temperature applications of 260°C (500°F) or greater.

The base oil component in THERMEX is made from synthetic API Group V, polyalkylene glycol (PAG) fluid, known for its deposit control and lubricating properties at elevated temperatures. The silica gel thickener utilized in THERMEX is stable in very high temperature applications.

When subjected to extremely high temperatures, the base fluid in THERMEX grease will slowly vaporize leaving little or no deposit. Conventional soap thickened greases with petroleum or synthetic poly-alpha-olefin (PAO) base oils will have tendency to melt and/or form hard carbonaceous residues at elevated temperatures, which greatly reduces bearing life, increases maintenance costs and reduces productivity.

Features and Benefits

- **Provides excellent lubrication at elevated temperature with proper re-greasing intervals**
 - Extend bearing life
 - Reduces maintenance costs
- **Minimal deposits after high temperature service**
- **Suitable for use in hydrocarbon laden environments**
- **Dissolves in water for easy cleanup**

Applications

THERMEX has proven to be successful in the lubrication of bearings in conveyor chain carriers of enameling ovens, in glass manufacture and very high temperature fan bearings. It is particularly recommended for any high temperature application where lubricant carbonizing is a concern or in presence of hydrocarbons where a conventional grease would soften and wash away.

In order to ensure an optimal lubrication with THERMEX, the normal evaporation loss requires a certain re-greasing interval be maintained in order to replenish the component with fresh grease. The re-application of grease must be more frequent as the temperature increases.

While the PAG synthetic base fluid in THERMEX provides many benefits, it is also susceptible to mixing with water. Therefore, it is not recommended to use THERMEX in submerged applications, extremely humid environments or near lines where high pressure steam is released.

Considering the known incompatibility of PAG fluids with most other base oil types and limited compatibility of the silica gel thickener system with other thickening agents, it is safer to consider THERMEX as incompatible with other greases. As such, the introduction of THERMEX should be done in such a way that the previous grease is purged out as best as possible to avoid incompatibility issues.

What is the HT difference?

Petro-Canada starts with the HT purity process to produce water-white, 99.9% pure base oils. The result is a range of lubricants, specialty fluids and greases that deliver maximum performance for our customers.



Typical Performance Data

PROPERTY	TEST METHOD	THERMEX
Colour	PCM 264	Dark Amber
Texture	PCM 264	Buttery
Appearance	PCM 264	Smooth
Thickener Type	D128	Silica Gel
Thickener %	D128	7.0
Dropping Point, °C (°F)	D2265	260+ (500+)
Worked Penetration @ 25°C	D217	280
Oxidation Stability, 100 hours, kPa (psi)	D942	21 (3)
Base Oil Kinematic Viscosity		
cSt @ 40°C	D445	227
cSt @ 100°C		37
SUV @ 100°F		1150
SUV @ 210°F		177
Four Ball Weld Point,kg	D2596	160
Copper Corrosion	D4048	1b

The values quoted above are typical of normal production.They do not constitute a specification.

THERMEX must be replenished once the grease is evaporated by 50%. The following evaporation rate table can be used as a reference to determine regreasing intervals at 204°C (400°F) and 260°C (500°F).

Evaporation Rate Table (Results in wt%)

TIME	TEMPERATURE	
	400°F	500°F
1 hour	1.7%	7.5%
2 hours	2.2%	11.8%
4 hours	2.9%	49.6%
15 hours	11.1%	88.1%

For greater than 15 hours assume linearity.

Suggested application rate – may need to be modified based on specific situations/operational experience.

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