

BREOX COMPRESSOR LUBRICANT LPG9

INTRODUCTION

BREOX Compressor Lube LPG9 is a high performance synthetic gas compressor lubricant based on a Polyalkylene glycol. It is designed for enclosed pattern gas compressors for hydrocarbon and chemical gases where the crankcase and bearings operate in a gas-filled atmosphere. Under these conditions the gas is readily soluble in mineral oil lubricants which, on dilution, suffer a significant drop in viscosity (see Figure 1) and lubricant performance. This problem can be overcome by using **BREOX** Compressor Lube LPG9 in which the gases are much less soluble. **BREOX** Compressor Lube LPG9 is particularly suitable for marine service on vessels carrying specialist liquefied gas cargoes.

kinematic viscosity

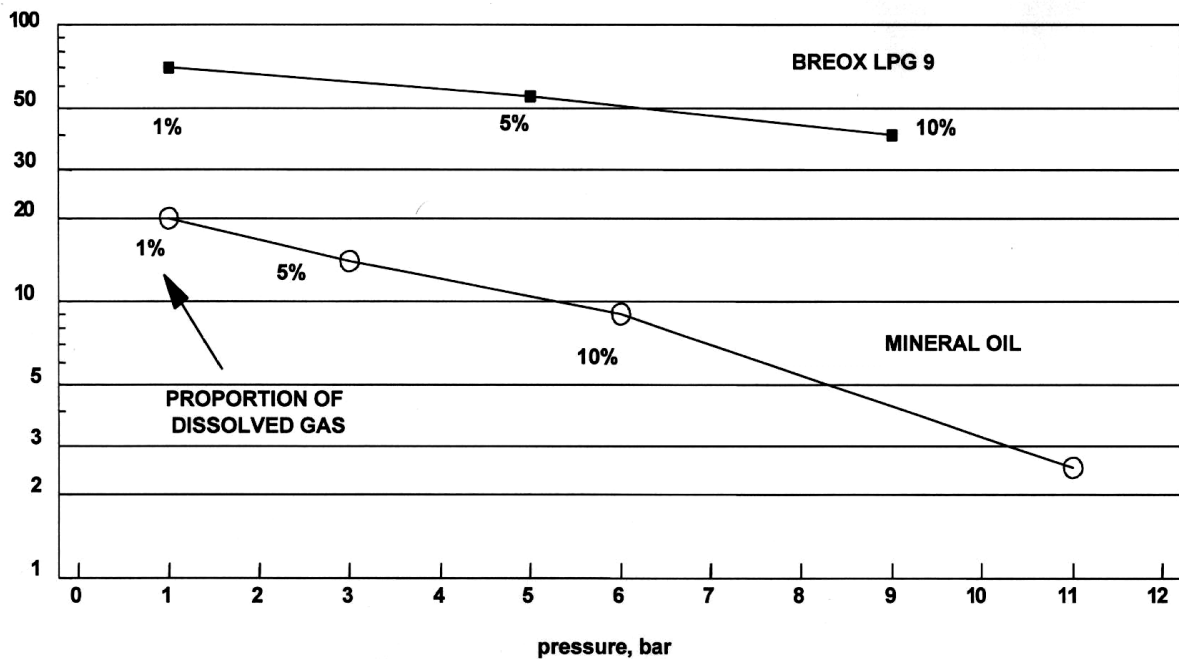


Figure 1 Effect of propane gas pressure on the viscosity of LPG compressor lubricants at 60 °C

ADVANTAGES

BREOX Compressor Lube LPG9 offers the following advantages over mineral oils and competitive synthetic fluids:

1. Reduced gas solubility leading to improved wear protection, extended lubricant life, improved compressor efficiency and reduced foaming.
2. Multigas service for a wide range of gases including vinyl chloride and butadiene. The lubricant does not promote the dimerisation of butadiene or generate solid deposits. **BREOX** Compressor Lube LPG9 therefore obviates the need to change to mineral oil for butadiene compression, thus simplifying the lubricant inventory, avoiding mistakes and saving time and expense.

TYPICAL PHYSICAL PROPERTIES

BREOX Compressor Lube LPG9 is a clear pale yellow viscous liquid with a mild odour. Typical properties are given below:

| | |
|------------------------------|---|
| Relative Density | 1.050@ 25 °C (ASTM D1298) |
| Viscosity | 185 cSt @ 40 °C (ASTM D445) 35 cSt @ 100 °C |
| Viscosity Index | 200 (ASTM D2270) |
| Flash Point | 260 °C (COC) (ASTM D92) |
| Pour Point | - 30 °C (ASTM D97) |
| Corrosion Test | Rating 0 (no corrosion; tested on cast iron and aluminium (test A, DIN 51355 |
| Foam test (ASTM D892) | Air 45/10 @ 24 °C Air 140/20 @ 93.5 °C Porpane 35/10 @ 24 °C Propane 70/20 @ 93.5 °C |

APPLICATIONS

BREOX Compressor Lube LPG9 is used for the following gases:

1. Liquefied petroleum gases such as propane and butane.
2. Liquefied natural gases such as methane and ethane.
3. Hydrocarbon chemical gases such as ethylene, propylene and butylene.
4. Chemical gases such as ammonia, vinyl chloride and butadiene.

ADDITIONAL INFORMATION

Ideally compression gas should be dry, but this product will tolerate up to 4 % water before hazing at 80 °C, and has been evaluated for its corrosion resistance with 2.5 % water. Common seal and gasket materials are unaffected by Breox LPG 9. Nitrile Rubber (NBR), Fluoro-Silicone or Vinyl-Methyl Polysiloxane (Q) are recommended. Ordinary industrial paints soften in the presence of this product. Two-pack epoxy formulations are normally resistant. This product should not be mixed with mineral oil.

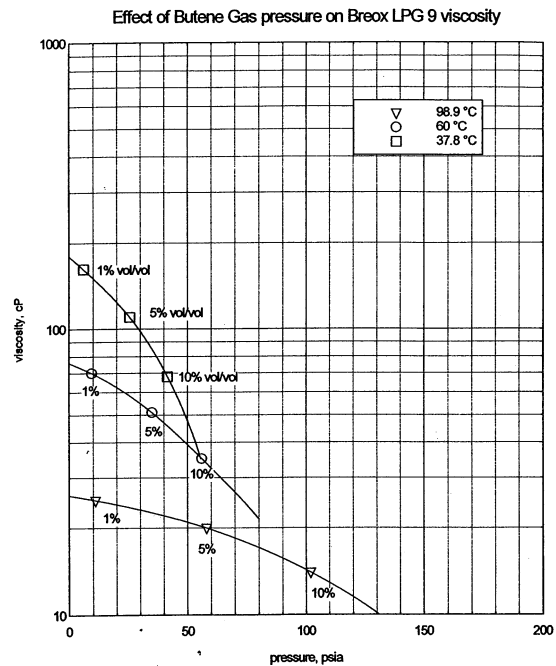
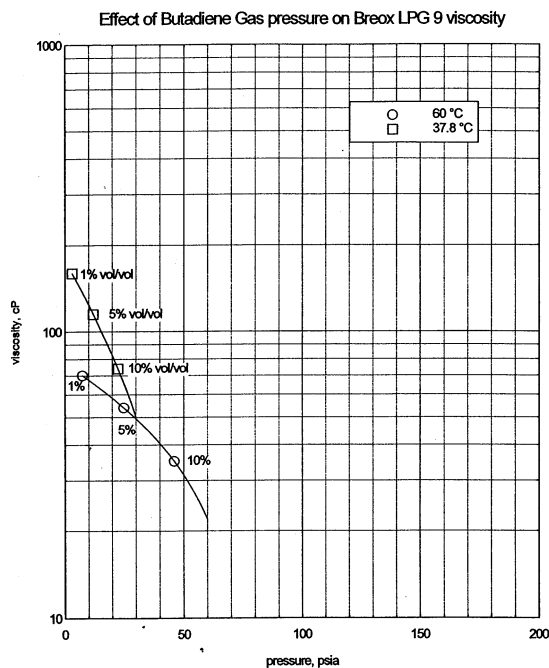
APPROVALS

BREOX Compressor Lube LPG9 is approved by:

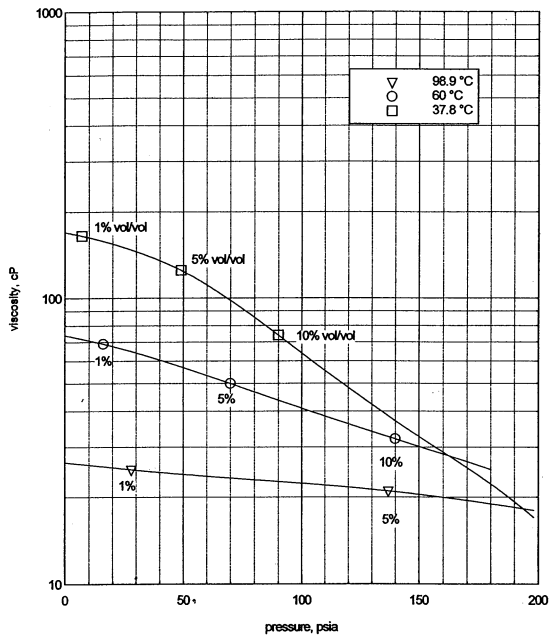
1. Sulzer Burckhardt A.G., Winterthur for use in their K-type gas cargo compressors for general LPG/LNG service and for ammonia, vinyl chloride monomer and butadiene.
2. Linde A.G., Munich for general service gas compression including ammonia, vinyl chloride monomer and butadiene.

PRESSURE VISCOSITY RELATIONSHIPS

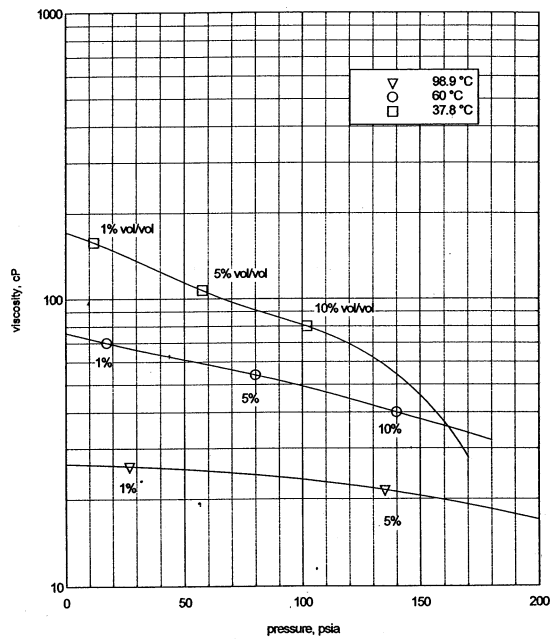
The following diagrams show more detailed information concerning pressure viscosity behaviour.



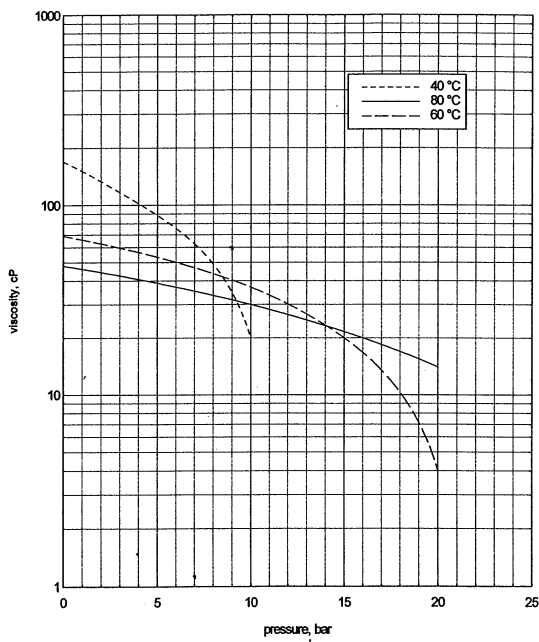
Effect of Propene Gas pressure on Breox LPG 9 viscosity



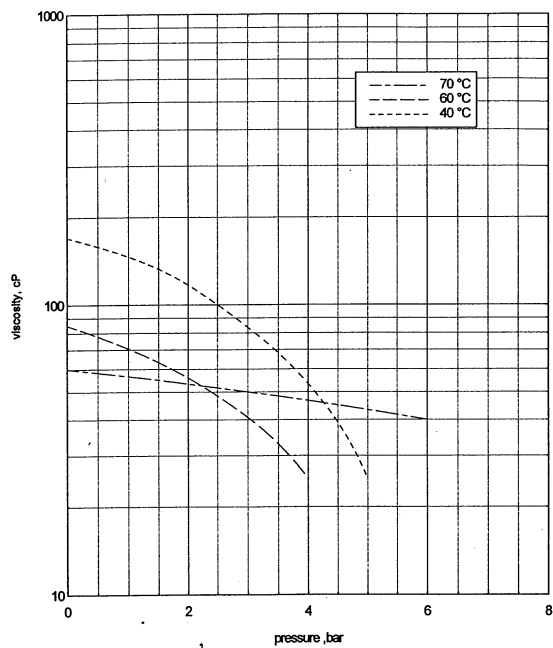
Effect of Propane Gas pressure on Breox LPG 9 viscosity



Effect of Ammonia Gas pressure on Breox LPG 9 viscosity



Effect of Methyl Chloride Gas pressure on Breox LPG 9 viscosity



Remarks

Handling & Safety:

For all relevant health and safety data and handling information, reference is made to the Material Safety Data Sheet (MSDS) for this product, additional copies of which are available on request.

Storage:

Revision-No.

2.2-08.2004 Effective August 17, 2004

The product can be stored for at least 2 years at ambient storage conditions and temperature without any deterioration.

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