



# Summit Industrial Products

**PROCESS GAS  
LUBRICANTS**

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## Gas Compressor Specialty Lubricants

With plants, sales offices and distributors around the world, Summit personnel work with gas compressor OEMs, packagers, operators and end users in various industries to solve compressor lubrication-related issues. Unplanned downtime is expensive. Governmental and social penalties for flaring gas or polluting the environment are increasing. Lead times for spare parts and new equipment are at the mercy of the overextended supply chain. The days of simply using standard gas engine oil or 'low-tech' compounded cylinder oil are just about over. Summit's specialty lubricants succeed where conventional lubricants fail. Our customers have discovered that using specialty lubricants, backed by experience and technical expertise, result in significant decreases in lubricant-related operating and maintenance costs.

### Applications

Each gas compressor application has its own unique set of operating parameters and issues. Summit offers a variety of lubricant base stocks to solve these issues. The lubricant selection process is critical for increased productivity and minimal downtime. Summit provides lubricants for each of the following applications.

Refinery	Landfill	Reinjection	CNG
CO <sub>2</sub> injection	Wellhead	Hydrogenation	Fire Flood
EOR – Enhanced Oil Recovery	Offshore	Vapor Recovery Units – VRU	Air Drilling Issues
Fertilizer	Fuel gas	Membrane Separation	
Chemical plant	Digester gas	BioGas	

### Issues

We are sure you have faced some of the issues listed below. Summit Industrial Products R&D has formulated a lubricant solution for each of these gas compressor problems:

Viscosity Dilution	Plugging of Injectors	Corrosion
Wash-off	Acid gas	Rust
Carry over	Sour gas	Premature wear rates
Catalyst poisoning	Chemical Reactivity	Shortened valve life
Plugging Formation	Water Contamination	Cold weather pumpability

### Gases

Every gas stream is unique. Summit Industrial Products has specifically developed a program to calculate the tendency of individual gases to be dissolved in lubricating oil. Summit can help you by recommending the proper compressor lubricant for the following gases:

Carbon Dioxide	Hydrocarbon	Natural Gas	Nitrogen	Ethylene
Hydrogen Sulfide	Ammonia	Helium	Hydrogen Chloride	Sulfur Dioxide
Propane	Hydrogen	Biogas	Landfill	





## Rotary Screw Compressor Lubrication

### Lubricating oils in rotary screw compressors serve these primary functions:

- They lubricate the rotors and the bearings
- They seal the gap between rotor and casing, and between the rotors
- They remove heat of compression
- They protect against corrosion



Oil flooded screw compressors come in intimate contact with the gas stream being compressed. The oil will absorb the gas being compressed which results in a decrease in viscosity. The degree of viscosity reduction depends on the lubricant selected, gas composition, discharge pressure and discharge temperature. Summit has the expertise to select the correct starting base stock and viscosity to ensure the diluted viscosity meets OEM viscosity requirements for bearing lubrication and effective sealing.

Acid gases are commonly present in many gas compositions along with high water vapor content. Summit gas compressor lubricants are formulated to protect against the effects of the corrosive combination of water and  $\text{CO}_2/\text{H}_2\text{S}$ .

## Reciprocation Compressor Cylinder/ Packing Lubrication

### What makes lubricating reciprocating gas compressors so unique?

- Many moving parts
- Number of diverse gas streams
- Stripping of lubricant from cylinder walls
- High discharge pressures
- High discharge temperatures
- High oil carryover and consumption
- Cold weather oil flow issues



### Benefits of Synthetics in Reciprocating Compressors Compared to Mineral Oils

- **Higher Viscosity Index (V.I.)** - better low temperature flow characteristics and a wider operating temperature range
- **Low Coefficient of Friction** - Reduced friction leads to longer ring life, longer packing life, lower packing temperatures and less power consumption.
- **Polarity** - A charge within the lubricant that helps it cling to metal surfaces. Polarity also means the lubricant can better resist absorption into the gas stream resulting in lower feed rates for most gases compared to mineral oils.
- **Lower Feed rates** - Less chance for "valve stiction" leading to longer valve life. Less chance for "hydraulic" of packing materials. Offsets some of the higher cost of synthetics. Lower down stream carryover and contamination levels.

# Rotating Gas Compressor Lubricants

Summit offers a full line of petroleum and synthetic lubricants to meet your gas compressor lubrication needs. Our range of products is as comprehensive as the many uses of rotary screw compressors in oil and gas industries. Our staff of professionals can assist you in choosing the right lubricant for your compressor.

- NGP series** - petroleum based for flooded rotary screws & reciprocating compressor cylinders and frames
- NGSH series** - full synthetic, PAO/Ester based lubricant for rotary screws and reciprocating compressor cylinders and frames. Preferred by many OEMs over petroleum based oils.
- PGS series** - full synthetic, PAG based oil for flooded rotary screws.
- NGL series** - full synthetic, PAG based oil for reciprocating compressor frames and cylinders.
- PGI series** - full synthetic, water in-soluble, PAG based lubricant for propane refrigeration.
- LCG series** - Synthetic PAO specifically developed for rotary screws in landfill and corrosive environments.
- DSL-1220** - An ISO 220 Ester based synthetic with a specialized additive package for dry nitrogen compression.
- DSL XM series** - full synthetic, Ester based for hydrogen reciprocating compressors

Summit wants to be your specialty lubrication partner the world over. We believe that specialty lubricants are an integral part of the design of gas compressors and pay for themselves. Let us prove it to you.



## Summit Industrial Products

- P.O. Box 131359 • Tyler, TX 75713
- 9010 CR 2120 • Tyler, TX 75707

**1.800.749.5823**

[www.klsummit.com](http://www.klsummit.com)



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