

CPI Fluid Engineering

Lubricants for Specialty Gas Compressors



What to look for in a specialty gas compressor lubricant

Specialty gas compressors cover a variety of applications, so how do you know which lubricant to choose? It all starts with the gas composition.

Hydrocarbon Gas Applications

One of the key concerns in these applications is hydrocarbon gas dilution, which can affect the lubricant viscosity. Dilution varies based on gas stream, temperature and pressure – which can make it difficult to choose the correct lubricant. CPI has proprietary computer technology to estimate the expected gas dilution to narrow down the lubricant selection and approximate the working viscosity at the bearings.

Gas compositions vary depending on application, location, etc. Some examples of components that may be found in a hydrocarbon gas application are:

- Methane, ethane, propane, etc.
- Ethylene, propylene, isobutylene, etc.
- Hydrogen sulfide (H₂S)
- Hydrogen, helium, nitrogen, carbon dioxide (CO₂), etc.
- Water

Process Gas Applications

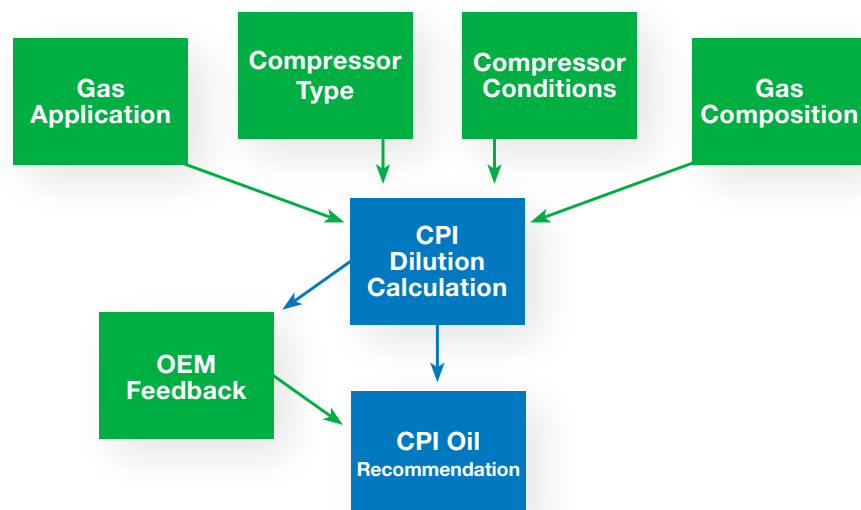
Process gases can be further broken down into two types – inert and reactive gases. In both cases, the concern is not with hydrocarbon dilution, but with the chemical reactivity of the gas with the lubricant. Downstream gas purity is critical to prevent catalyst poisoning and ensure continuous operation.

Example Reactive Gases

- Methyl chloride
- Ammonia
- Sulfur dioxide

Example Inert Gases

- Hydrogen
- Nitrogen
- Carbon Dioxide



Lubricants for Specialty Gas Compressors

CPI's line of specialty gas compressor lubricants offers a complete range of chemistries to meet the needs of your application and ensure the long-term performance of your equipment. We offer products for flooded rotary screw, reciprocating and centrifugal compressors.

Product	Viscosity Range	Process Gas	Hydrocarbon Gas	Base Oil	Description/Recommended Application
CPI®-1000	46-150	✓		HTMO	Chemically inert lubricants formulated with high quality hydrotreated, isodewaxed mineral oil. Recommended for use with inert or reactive process gas below 200°F.
CPI®-1005	46-150		✓	HTMO	Chemically inert lubricants formulated with additives for hydrogen sulfide (H2S) corrosion protection. Recommended for use in sour natural gas applications below 200°F.
CPI®-1010	68-150		✓	HTMO	Hydrotreated, isodewaxed mineral oil based lubricants with excellent corrosion protection. Recommended for use in light, sweet gas applications below 200°F.
CPI®-9109	125, 125W		✓	HTMO	Hydrotreated, isodewaxed mineral oil based lubricants with a low-ash additive package for use in stationary natural gas engines powering reciprocating compressors.
CPI®-4600	10-220	✓		PAO	Chemically inert polyalphaolefin based lubricants. Recommended for use with inert gases above 200°F.
CPI®-4601	32-150	✓	✓	PAO	Polyalphaolefin based lubricants with excellent corrosion and oxidation protection. Recommended for use in light, sweet gas applications and inert or reactive gases with oxidizers present.
CPI®-4624-F	32-220	✓		PAO	NSF H1 registered polyalphaolefin lubricants with excellent oxidation stability. Recommended for use in CO2 compression applications and other inert or reactive gas applications with oxidizers present.
CPI®-6000	68-100	✓		PAO	Custom blended chemically inert polyalphaolefin based lubricants. Recommended for use in reactive gas applications over 200°F.
CPI®-6005	32-220	✓	✓	PAO	Polyalphaolefin based lubricants formulated with additives for hydrogen sulfide (H2S) corrosion protection. Recommended for use in sour natural gas applications above 200°F.
CPI®-1516	68-150		✓	WI PAG	Polyalkylene glycol based lubricants with excellent protection against yellow metal staining. Recommended for use in propane refrigeration and other light, sweet natural gas applications.
CPI®-1519	100-220	✓	✓	WS PAG	Polyalkylene glycol based lubricants with hydrogen sulfide (H2S) corrosion protection and limited dilution with hydrocarbon gases. Recommended for use in heavy, sour gas applications.
CPI®-1507	68-150		✓	PEG	Polyethylene glycol based lubricants that resist hydrocarbon dilution. Recommended for use in heavy, sweet gas applications.
CPI®-1508	68-150		✓	PEG	Polyethylene glycol based lubricants that resist hydrocarbon dilution and hydrogen sulfide (H2S) corrosion protection. Recommended for use in heavy, sour gas applications.

Who is CPI?

CPI Fluid Engineering is a division of The Lubrizol Corporation. The Lubrizol Corporation, a Berkshire Hathaway company, is an innovative specialty chemical company that produces and supplies technologies to customers in the global transportation, industrial and consumer markets.

CPI Fluid Engineering is a world leader in synthetic lubricants for compressors and specialty industrial applications. Our formulation and technical application expertise, combined with our flexibility and responsiveness, enhance the quality and value of our customers' products. CPI delivers fluid performance, technology support and customer service to meet customer needs.

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