

supplied by

cptec

**PRODUCT
CATALOGUE**

**INDUSTRIAL LUBRICANTS
FOR COMPRESSOR EQUIPMENT**

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THE CPTEC COMPANY

We produce and supply specialty lubricants for industrial equipment — gas, air and refrigeration compressors, turbines, hydraulic systems and gearboxes.

Our team includes unique experts with years of experience, not only in the selection, use and analysis of oils, but also with the practical experience in setting up, troubleshooting and operating dynamic equipment.

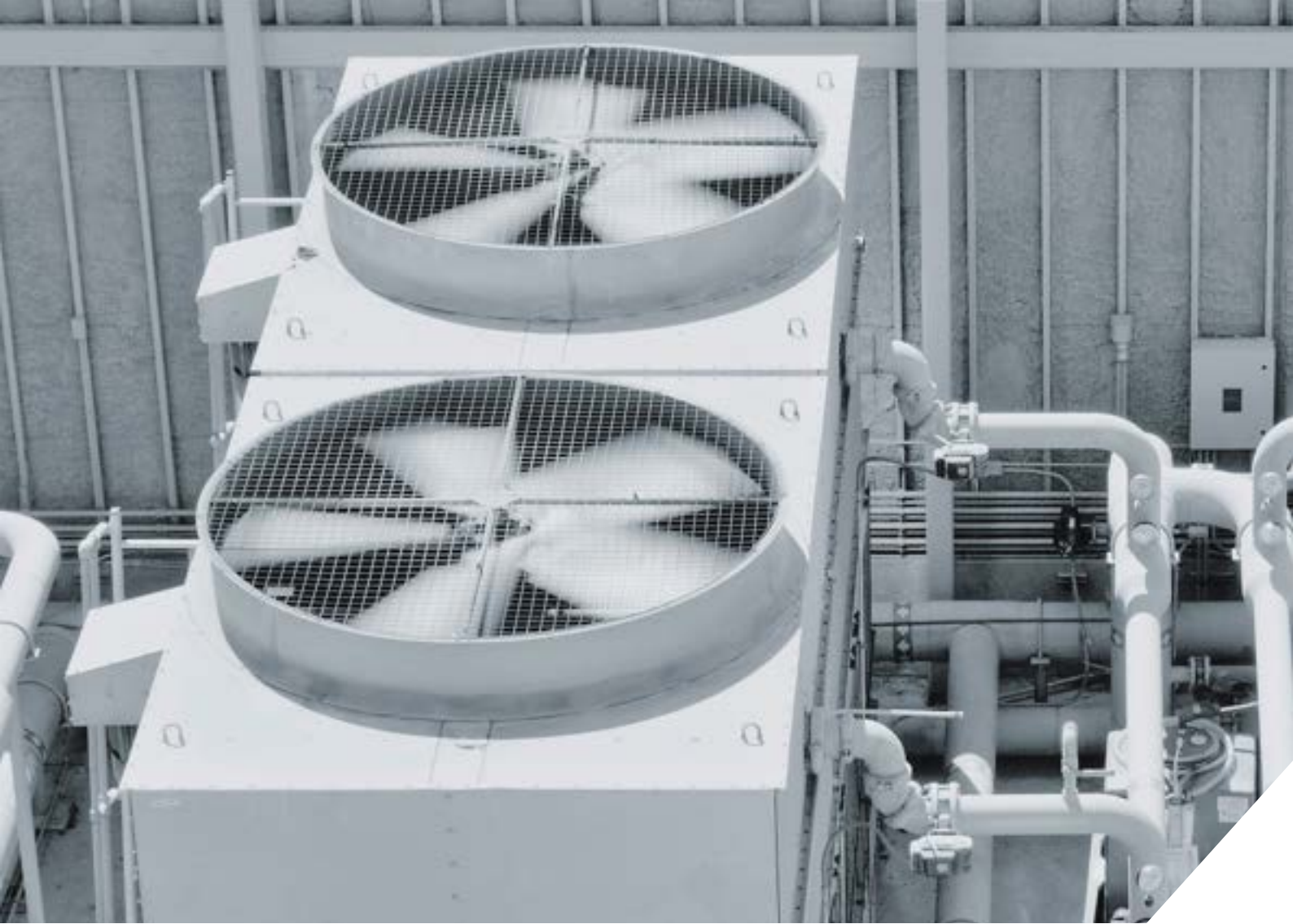
Our production process is designed to manufacture high performance lubricants for specific applications.

We do not produce bulk products in large volumes — we focus on unique products that work where other products fail.



We strive for daily improvement to ensure that our solutions, products and technical support are always of the highest level.





We are operating in

22 countries

Warehouse capacity up to

2000 drums

Production capacity

60 m³ per day

100+

Unique products in portfolio



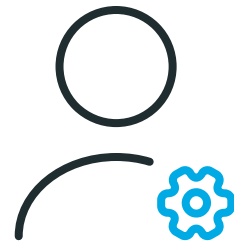
QA SERVICE
to ensure product quality

+

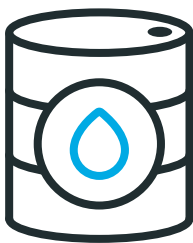
LONG-TERM PARTNERSHIP
with laboratories
in Europe and Asia



Broad logistics network



Certificated tribology experts



Supply for OEM
and private label contracts



Exclusive software
for calculations



OUR APPROACH TO R&D AND PRODUCTION

We formulate lubricants based on our experience with gas, refrigeration and air compressors. We know what is critical for each specific application and pay special attention to those product properties that are most important. When developing lubricants, we also take into account the positive and negative experiences of major lubricant producers.

All products are tested multiple times. We begin with the quality control of the incoming base materials, not only in terms of basic characteristics, but also testing the properties of the material. Finally, each batch is tested according to our strict standard and a sample is preserved for possible future testing.

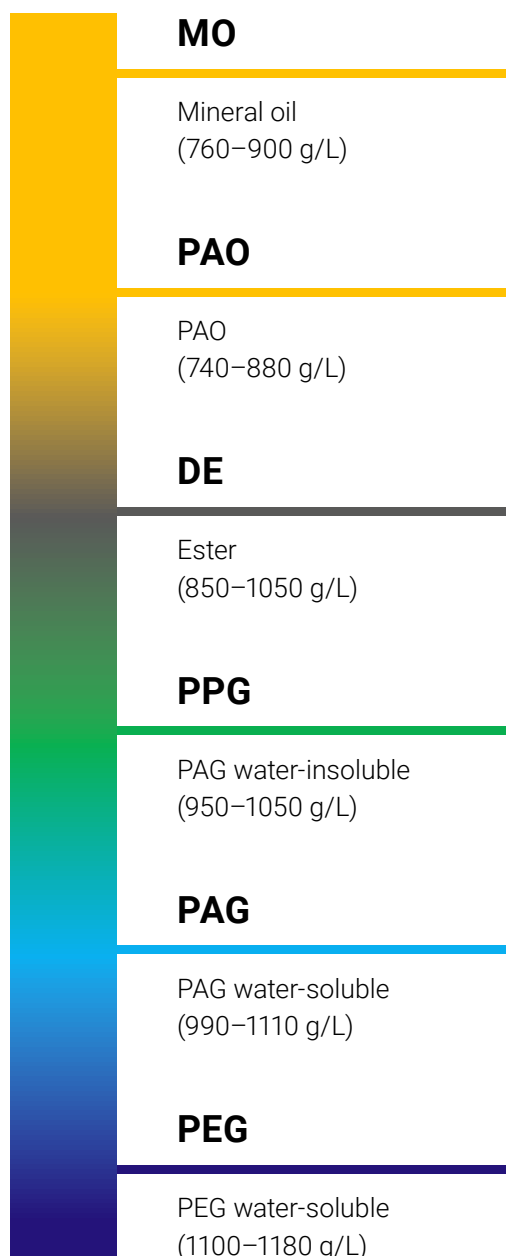


ISO 9001:2005
Compliance

CPTEC NG product range is designed to operate in rough gas compressor conditions. NG range products are formulated to work with aggressive environment, sour and diluting gases and gases with high levels of contaminants.

Non-Polar oils

More susceptible to gas dilution



Polar oils

Less susceptible to gas dilution

When oil comes in contact with the pumped gas in the compressor, gas dissolves in the oil, changing its characteristics and viscosity. The performance of the lubricant will not only be affected by the composition of the pumped gas, but also by pressure, temperature and solid and liquid contaminants.

In order to be able to offer a solution for any conditions, we created a wide range of products based on various base oils. The main characteristic that determines the choice of the base oil is its resistance of dilution by hydrocarbon gases.

For each project, CPTEC technical support specialists perform calculations of the oil dilution and select the product in such a way that it meets the compressor manufacturer's specifications.

When selecting the lubricant, we also take into account many other factors, such as the equipment in the same gas stream, fluids and contaminants that can enter the compressor and seal and coating materials scope.

NG range products have low evaporation tendency and are easily separated from the gas. To further reduce the oil carry-over, we work on a project together with the developers of separators and coalescer filters.

*To do our calculations and select the right lubricant, we need a completed questionnaire which can be found on a website www.cptec.com/calc.



NG range products made to work in oxidative environment. These lubricants are very stable and contain effective corrosion inhibitors and antioxidant additives.



Oxidation stability



Chemical stability



Gas dilution resistance



Antifoam properties



Corrosion protection

CPTEC NG-1500 SERIES

Compressor lubricants formulated with group II mineral oil for piston and screw gas compressors. Provide protection against H₂S corrosion and can be used for pumping gas with high levels of contaminants. Higher viscosity products may be used in once-through lubrication systems.



Properties	Method ASTM	NG-1500-68	NG-1500-100	NG-1500-150	NG-1500-220
ISO VG		68	100	150	220
Kinematic viscosity @100 °C, cSt	D445	9	13	18	30
Viscosity Index	D2270	113	110	131	142
Density at 15 °C, g/L	D92	870	865	865	856

CPTEC NG-4000 SERIES

Synthetic compressor lubricant series formulated with PAO base oil. Designed for use in screw compressors and for applications where high oxidation and thermal stability is required. Suitable for clean and dry gases, like turbine fuel gas compressors. Low viscosity products are used for labyrinth seal applications.



Properties	Method ASTM	NG-4000-10	NG-4000-46	NG-4000-68	NG-4000-100
ISO VG		10	46	68	100
Kinematic viscosity @100 °C, cSt	D445	3	8	10	14
Viscosity Index	D2270	110	128	133	170
Density at 15 °C, g/L	D92	820	840	835	835

CPTEC NG-4700 SERIES

Synthetic compressor lubricants based on PAO with the ester co-base, designed for screw compressors that pump light hydrocarbon gases and air. This series features enhanced antioxidant, protective and cleaning properties, ensuring no varnish and sludge on equipment parts.

PAO

Properties	Method ASTM	NG-4700-68	NG-4700-100	NG-4700-150
ISO VG		68	100	150
Kinematic viscosity @100 °C, cSt	D445	10	14	19
Viscosity Index	D2270	130	142	147
Density at 15 °C, g/L	D92	860	870	870

*ISO VG 32 and 46 available.

CPTEC NG-5000 SERIES

Ester-based compressor oils for light hydrocarbon gases, process gases and air where there is a high potential of soot and varnish formation. Esters show natural cleaning properties and minimise the possibility of deposit formation.

DE

Properties	Method ASTM	NG-5000-68	NG-5000-100	NG-5000-150	NG-5000-220
ISO VG		68	100	150	220
Kinematic viscosity @100 °C, cSt	D445	8	12	15	21
Viscosity Index	D2270	97	102	107	114
Density at 15 °C, g/L	D92	860	860	870	880

CPTEC NG-6500 SERIES

Synthetic compressor oils that are highly thermal and oxidation stable. Based on PAO and compatible with mineral oils. Suitable for operations with high discharge and ambient temperatures, as well as applications where CO₂ and H₂S is present in the gas composition.

PAO

Properties	Method ASTM	NG-6500-32	NG-6500-68	NG-6500-100	NG-6500-150
ISO VG		32	68	100	150
Kinematic viscosity @100 °C, cSt	D445	6	10	14	19
Viscosity Index	D2270	136	139	151	156
Density at 15 °C, g/L	D92	827	835	835	850

CPTEC NG-7000 SERIES

Synthetic compressor lubricant formulated with water-soluble polyalkylene glycols (PAGs). These products of high thermal and chemical stability can be used for compressing light hydrocarbon gases and for industrial propane refrigeration units. Suits systems with low concentrations of H₂S and if spirits and water are present in the gas stream.

PPG

Properties	Method ASTM	NG-7000-68	NG-7000-100	NG-7000-150
ISO VG		68	100	150
Kinematic viscosity @100 °C, cSt	D445	13	18	23
Viscosity Index	D2270	200	220	196
Density at 15 °C, g/L	D92	990	997	1003

CPTEC NG-8500

Synthetic compressor lubricant formulated with water-soluble PAGs. Suitable for pumping of medium and heavy hydrocarbon gases, natural gas, process gases and in applications where high thermal and oxidative stability is required. Suitable for high discharge temperature applications and gas compositions with CO₂ and H₂S presence.

PAG

Properties	Method ASTM	NG-8500-68	NG-8500-100	NG-8500-150
ISO VG		68	100	150
Kinematic viscosity @100 °C, cSt	D445	14	20	28
Viscosity Index	D2270	215	218	222
Density at 15 °C, g/L	D92	1040	1050	1060

*ISO VG 32 and 220 available.

CPTEC NG-9500

Synthetic PEG based compressor lubricants, designed for screw compressors handling heavy hydrocarbon gases. This product series is suitable for gases with high oxidising properties and for industrial propylene refrigeration units.

PEG

Properties	Method ASTM	NG-8500-68	NG-8500-100
ISO VG		68	100
Kinematic viscosity @100 °C, cSt	D445	11	15
Viscosity Index	D2270	155	158
Density at 15 °C, g/L	D92	1120	1140

The AR product line is designed for long-term operation in screw, rotary and reciprocating compressors. We are specialised in advanced products that guarantee long service life and high stability. If your compressors operate in challenging conditions – high discharge temperature, high relative humidity, dust, seawater, oxidising environment – we have the solution.



Oxidation stability



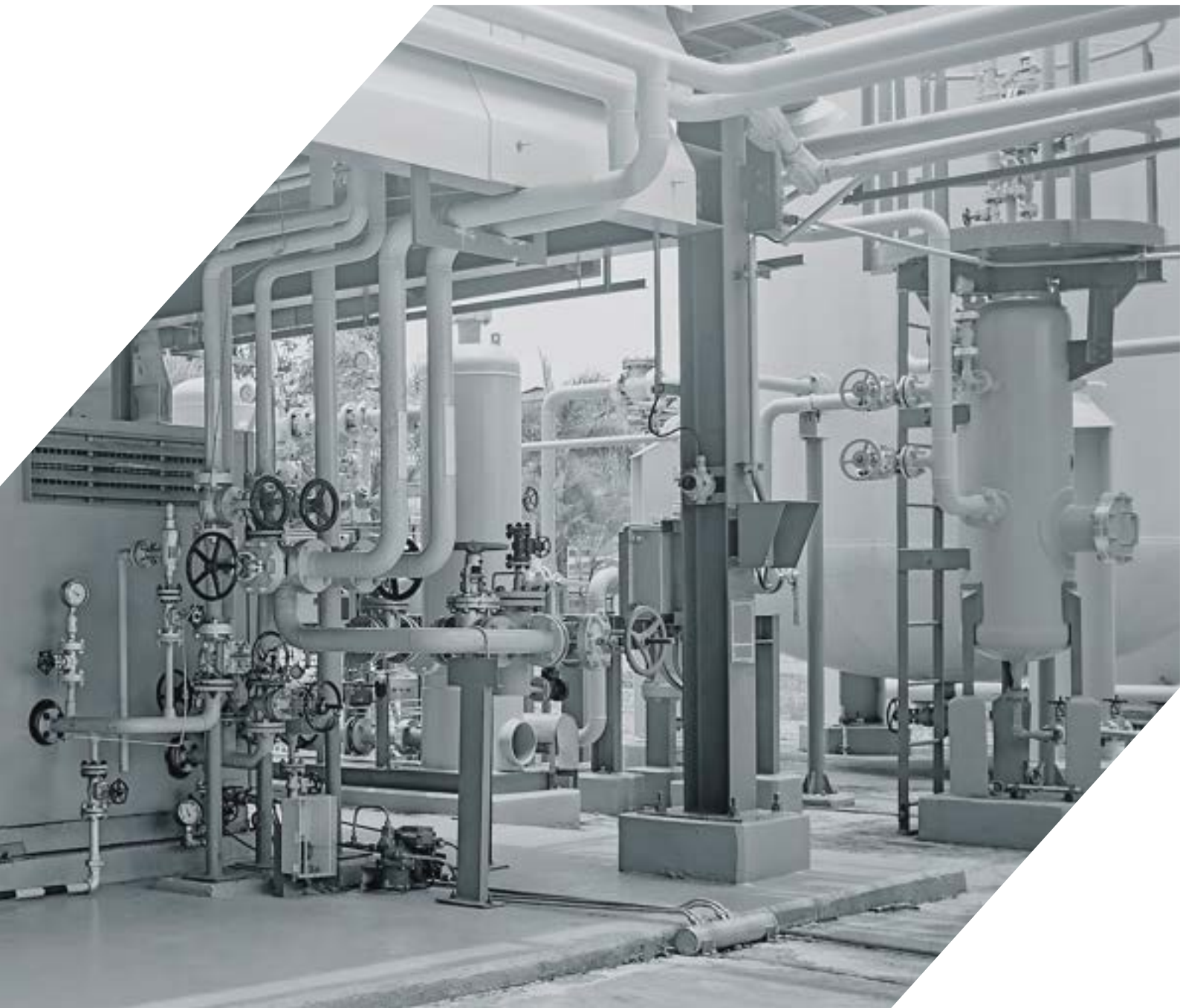
Thermal stability



Antifoam properties



Anti-wear properties



CPTEC AR-3000

Compressor oils based on hydrocracked base oils for reciprocating and rotary screw compressors used for compressing air. Designed for prolonged operation with moist air under elevated temperatures.

MO

Properties	Method ASTM	AR-3000-46	AR-3000-68	AR-3000-100
Class ISO VG		46	68	100
Viscosity at 100 °C, cSt	D445	7	9	12
Viscosity Index	D2270	98	101	108
Density at 15 °C, g/L	D92	860	860	870

* ISO VG 32 and 150 available.

CPTEC AR-CCG

Synthetic oil for refrigeration compressors, based on a mixture of polyalkylene glycols (PAG) and complex esters. It is mainly used in lubrication systems for centrifugal compressors.

DE

Properties	Method ASTM	AR-CCG
Class ISO VG		32
Viscosity at 100 °C, cSt	D445	6
Viscosity index	D2270	144
Density at 15 °C, g/L	D92	970

CPTEC NG-4700

Synthetic compressor oils based on PAO with the addition of esters, designed for rotary gas compressors and also suitable for air. This series is characterised by an increased antioxidant, protective and cleaning properties, which ensures the absence of soot and sludge inside the equipment. Can be used up to 12,000 hours.

PAO

Properties	Method ASTM	NG-4700-46	NG-4700-68	NG-4700-100
Class ISO VG		46	68	100
Viscosity at 100 °C, cSt	D445	7	10	14
Viscosity Index	D2270	123	130	142
Density at 15 °C, g/L	D92	860	860	870

* ISO VG 32 and 150 available.

CPTEC RL product line includes three different series:

1. **RL-1900** for ammonia systems;
2. **RL-4000** for screw compressors that use ammonia as refrigerant, CFC and HCFC refrigerants;
3. **RL-5500** for modern HFC refrigerants, including those with low Global Warming Potential (Low GWP).



Oxidation stability



Compatibility with refrigerants



Anti-wear properties



Low pour point

Oils for refrigeration systems using hydrocarbon gases as refrigerant can be found in the Gas Compressor section.

CPTEC RL-1900

Oil specifically designed for ammonia refrigeration compressors, based on group II mineral oil. It contains an adapted additive package for the specific working conditions in an ammonia system, including an additive to maintain the sealing properties. This series is characterised by low volatility and excellent low-temperature properties.

MO

Properties	Method ASTM	RL-1900-68
Class ISO VG		68
Viscosity at 100 °C, cSt	D445	7
Viscosity index	D2270	110
Density at 15 °C, g/L	D92	850
Pour point, °C	D97	-42

*The selection of products for such systems also involves calculating dilution based on a completed survey that can be found by the link www.cptec.com/calc.



CPTEC RL-4000

Oils for ammonia and freon refrigeration systems based on PAO. These lubricants have high thermal and chemical stability which allows them to be used over a wide temperature range. They are compatible with mineral oils and do not require flushing when changing the oil.

PAO

Properties	Method ASTM	RL-4000-68
Class ISO VG		68
Viscosity at 100 °C, cSt	D445	10
Viscosity index	D2270	145
Density at 15 °C, g/L	D92	830
Pour point, °C	D97	-54

CPTEC RL-5500

Synthetic compressor oils based on polyol esters (POE). Thanks to the use of an advanced additive package, these oils can successfully replace specialised products from other manufacturers. The RL-5500 series is designed for use in screw, reciprocating, centrifugal and scroll compressors. High-quality packaging and innovative production ensures minimum moisture content in the oil.

POE

Compatible with refrigerants:

R-32, R-1234yf, R-134a, R-448a, R-449a, R-455a, R-450, R-404a, R-410a, R-417a, R-422a, R-422d, R-427a, R-507, R-508b, R-513a.

Properties	Method ASTM	RL-5500-32	RL-5500-68	RL-5500-170
Class ISO VG		32	68	170
Viscosity at 100 °C, cSt	D445	6	8	14
Viscosity index	D2270	105	89	83
Density at 15 °C, g/L	D92	980	960	960
Pour point, °C	D97	-48	-37	-25

* Oil of this line is also available in the following ISO VG classes:
low viscosity for scroll, rotary and reciprocating machinery – 32, 46, 55, 68;
high viscosity for reciprocating and screw compressors – 100, 120, 150, 170, 220, 320.

If, for some reason, a significant amount of sludge has formed inside the equipment, in many cases, cleaning is possible without disassembling. We have solution either as add-on concentrate or as cleaning lubricant that could replace the oil in working unit.

In the case of replacing incompatible oils, the cleaner can be used as a flushing agent during the replacement process. This way we ensure that the old oil is completely removed from the system.

In certain operations, polymerization processes may begin inside the compressor itself. In this case, we use a solvent cleaner that is injected into the compression chamber or onto the compressor's impeller, dissolving and removing all polymer deposits on the parts.

Depending on the type of compressor and the medium being pumped, cleaning can be carried out both in working mode and in circulation mode.

CPTEC CF-1

This is a concentrated cleaner used for cleaning oil systems of compressors and other industrial equipment. The product is designed to be added to the existing oil system and allows for the cleaning of large-volume systems from sludges and varnish without stopping the equipment.

DE

Properties	Method ASTM	CF-1
Class ISO VG		15
Viscosity at 100 °C, cSt	D445	3
Viscosity index	D2270	98
Density at 15 °C, g/L	D92	900
Concentration usage		5-20%

CPTEC CCL

Synthetic oil cleaner based on diesters. It is used as a lubricant for compressor units and hydraulic systems during the cleaning period. It is designed to completely remove soot, varnish and sludge from the system and can also be used when switching to oil with a different base. Cleaning of certain types of gas compressors and refrigeration systems can only be carried out in circulation mode with the machine stopped.

DE

Properties	Method ASTM	CCL
Class ISO VG		46
Viscosity at 100 °C, cSt	D445	6
Viscosity index	D2270	71
Density at 15 °C, g/L	D92	960

CPTEC ROSSOL A-180

Product of the fractional distillation of crude oil with low sulphur content. It is used as a solvent for oils, rubbers, bitumen, polymers and carbonaceous deposits. It can also be used for cleaning of processing equipment in the gas processing industry.

MO

Properties	Method ASTM	ROSSOL A-180
Content of aromatic hydrocarbons, by mass %		>95
Density at 15 °C, g/L	D92	890
Pour point, °C	D97	-47

A comprehensive technical support is an important aspect of working with specialised lubricants – from calculation and selection of the right solution to troubleshooting and identifying the causes of deviations from operating parameters and failure modes.



SELECTION OF SPECIALISED LUBRICANTS AND ENGINEERING CALCULATIONS

To ensure a high-quality selection of oil for a gas compressor, we calculate the working viscosity of the oil taking into account the gas composition and compressor operating conditions.

This guarantees that the oil will meet the viscosity requirements of the compressor manufacturer. Based on these calculations, we also determine the possible operating limits and the need for heaters to prepare the machine for start.

In some cases, we work with the machine designer to calculate the droplet size in the gas, in order to select the best type of coalescer filters and evaluate the entrainment in the vapour phase.

During the design phase, we also advise the customer on recommendations for designing the oil system, such as the minimum oil circulation time or the performance and characteristics of the filtration system.



WE PROVIDE COMPREHENSIVE TECHNICAL DATA

The standard product description contains a small selection of data of the physical characteristics of the product. In order to make a comprehensive calculation of the system, designers require information on thermodynamics, changes in density with temperature, the pressure of saturated vapours and other data.

We provide all necessary information to compressor developers and package engineers. If any data is not available, we conduct research in the laboratory. This ensures that the operating parameters of the machine correspond to the calculated values.



ANALYSIS AND EVALUATION OF RESULTS

During controlled operation or during pilot-scale and resource testing, we analyse oil samples from the compressor to determine its condition. Standard parameters are determined such as viscosity, acid number, elemental analysis, water content and cleanliness class. These parameters are usually sufficient to determine the condition of the oil.

If this is not enough, we conduct more detailed testing to determine the presence and composition of contaminants and study how the secondary characteristics of the oil have changed.

Based on the results of each study, our experts prepare a conclusion.

*Recommendations for sampling for research can be found on our website www.cptec.com/lab.



REPLACING OTHER PRODUCTS WITH CPTEC

CPTEC oils successfully replace products from other manufacturers in gas, air and refrigeration compressors. Any oil replacement must be accompanied by a preliminary study of the technical feasibility and calculations of the operating parameters.

We also conduct additional compatibility studies of products using the updated ASTM D 7155 standard. In some cases, we conduct field testing together with the customer to ensure the performance of the oil under specific conditions before scaling up.

We have prepared a table of possible replacements, which can give you a quick reference to primarily understand the

possibility of oil replacement to CPTEC, although before implementation we strongly recommend you contact our technical support team. If the product you are looking to replace is not listed in the table, please send us a request and we will find a solution for you.

BOGE Syprem 8000 S	PAO+E	NG-4700-68
CPI-1005-100	MO	NG-1500-100
CPI-1005-150	MO	NG-1500-150
CPI-1005-220	MO	NG-1500-220
CPI-1005-46	MO	NG-1500-46
CPI-1005-68	MO	NG-1500-68
CPI-1009-68	MO	RL-1900-68
CPI-1507-100	PEG	NG-9500-100
CPI-1507-68	PEG	NG-9500-68
CPI-1508-100	PEG	NG-9500-100
CPI-1508-68	PEG	NG-9500-68
CPI-1515-100	PAG WS	NG-8500-100
CPI-1515-150	PAG WS	NG-8500-150
CPI-1515-220	PAG WS	NG-8500-220
CPI-1515-32	PAG WS	NG-8500-32
CPI-1515-68	PAG WS	NG-8500-68

Current product	Base oil	CPTEC product
CPI-1516-100	PAG WI	NG-7000-100
CPI-1516-150	PAG WI	NG-7000-150
CPI-1516-68	PAG WI	NG-7000-68
CPI-1519-100	PAG WS	NG-8500-100
CPI-1519-150	PAG WS	NG-8500-150
CPI-1519-220	PAG WS	NG-8500-220
CPI-1519-68	PAG WS	NG-8500-68
CPI-4600-100	PAO	NG-4000-100
CPI-4600-46	PAO	NG-4000-46
CPI-4601-100	PAO+E	NG-4700-100
CPI-4601-68	PAO+E	NG-4700-68
CPI-6005-100	PAO	NG-6500-100
CPI-6005-150	PAO	NG-6500-150
CPI-6005-32	PAO	NG-6500-32
CPI-6005-68	PAO	NG-6500-68
Gardner Denver AEON 9000SP	PAO+E	NG-4700-68
Kluber SH-100	PAO+E	NG-4700-100
Kluber SH-68	PAO+E	NG-4700-68
Kluber Summit NGSH 100	PAO	NG-6500-100
Kluber Summit NGSH 150	PAO	NG-6500-150
Kluber Summit NGSH 68	PAO	NG-6500-68
Kluber Summit PGI 100	PAG WI	NG-7000-100
Kluber Summit PGI 150	PAG WI	NG-7000-150
Kluber Summit PGI 68	PAG WI	NG-7000-68
Kluber Summit PGS 100	PAG WS	NG-8500-100
Kluber Summit PGS 150	PAG WS	NG-8500-150
Kluber Summit PGS 2	PEG	NG-9500-68

Current product	Base oil	CPTEC product
Kluber Summit PGS 68	PAG WS	NG-8500-68
Mobil Gargoyle Arctic Oil 300	MO	RL-1900-68
Mobil Gargoyle Arctic SHC 226E	PAO	RL-4000-68
Mobil Gargoyle Arctic SHC 228	PAO	RL-4000-100
Mobil Glygoyle 11	PAG WS	NG-8500-100
Mobil Glygoyle 22	PAG WS	NG-8500-150
Mobil Glygoyle 30	PAG WS	NG-8500-220
Mobil Rarus 826	DE	NG-5000-68
Mobil Rarus 827	DE	NG-5000-100
Mobil Rarus 829	DE	NG-5000-150
Mobil Rarus SHC 1026	PAO+E	NG-4700-68
Mobil Rarus SHC 1027	PAO+E	NG-4700-100
Petro-Canada SPX 5000	PAG WI	NG-7000-150
Sabroe PAO 68	PAO	RL-4000-68
Shell Corena S4 R 46	PAO+E	NG-4700-46
Shell Corena S4 R 68	PAO+E	NG-4700-68
Shell Gas Compressor Oil S3 PSN 220	MO	NG-1500-220
Shell Gas Compressor Oil S4 RN 68	PEG	NG-9500-68
Shell Gas Compressor Oil S4 PV 190	PAG WS	NG-8500-180
Shell Refrigeration Oil S2 FR-A	MO	RL-1900-68
Total Dacnis LPG 150	PAG WS	NG-8500-150
Vilter Methane PAO 100	PAO+E	NG-4700-100
Vilter Methane PAO 68	PAO+E	NG-4700-68
VPT Estsyn CE 100	DE	NG-5000-100
VPT Estsyn CE 150	DE	NG-5000-150
VPT Estsyn CE 220	DE	NG-5000-220
VPT Estsyn CE 46	DE	NG-5000-46

Current product	Base oil	CPTEC product
VPT Estsyn CE 68	DE	NG-5000-68
Vilter Methane PAO 68	PAO + E	NG-4700-68
VPT Estsyn CE 100	DE	NG-5000-100
VPT Estsyn CE 150	DE	NG-5000-150
VPT Estsyn CE 220	DE	NG-5000-220
VPT Estsyn CE 46	DE	NG-5000-46
VPT Estsyn CE 68	DE	NG-5000-68

If you can't find your product in the list, please send us inquiry to find a solution.
mail@cptec.com

Note that list of possible replacements does not guarantee it is technically possible in any condition and environment. Prior to replace any product please consult CPTEC technical support.

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