

## Klüber Summit® R 100, R 200, R 300, R 500, R 600

Synthetic compressor oils, particularly for highly loaded ammonia and CO<sub>2</sub> refrigeration plants

### Benefits for your application

- Low maintenance costs due to extended oil change intervals and reduced oil consumption
- Easy compressor oil conversion due to neutral behavior towards seals
- High efficiency of the refrigeration plant due to reduced oil deposits
- Low operating costs due to long service life of filters and oil separators
- Wide range of application with evaporating temperatures, in some cases down to -50°C\*
- Meets NSF H1 requirements for use in the food-processing industry (except for Klüber Summit R 500 and R 600)

### Application

Klüber Summit R series lubricants have been designed especially for highly loaded screw-type and reciprocating piston compressors which are operated with ammonia (R717) or CO<sub>2</sub> (R744).

These lubricants can also be used with natural hydrocarbon refrigerants like propane (R290), propylene (R1270) or butane (R600). Especially with these refrigerants, the solubility of the gas in the oil under operating conditions and the resulting drop in viscosity has to be taken into account. Klüber Lubrication would be pleased to assist you in selecting the most appropriate oil.

Due to the synthetic base oil contained in the Klüber Summit R series lubricants, oil carryover into the refrigeration cycle is much lower than with conventional mineral oils, which helps to reduce oil consumption.

The viscosity of the oils remains constant for a long time, due to the fact that only a few highly volatile fractions are contained in the oil. Oil changes due to the increase in viscosity can be extended considerably.

The base oil offers high chemical stability, particularly to ammonia, the typical blackening of conventional mineral oils or deposits in the refrigeration cycle are prevented.

Our experience gained in practice has shown that Klüber Summit 200 can be used for evaporating temperatures as low as -50°C depending on the operating conditions\*.

### Description

Klüber Summit R series lubricants are based on polyalphaolefins. They are free from paraffin and offer good cold flow properties. They contain base oils of high chemical stability and show a low tendency to evaporation.

Klüber Summit R series lubricants are miscible with mineral oils.

Klüber Summit R 100, 200 and 300 comply with the requirements set forth in DIN 51 503-1, KAA (08.97).

Klüber Summit R 100, 200 and 300 meet the requirements "Guidelines of sec. 21 CFR 178.3570 of FDA Regulations". They have been registered by NSF under category H1 (NSF Reg. No. 134117, 134122 and 134123).

These lubricants can be used for refrigeration compressors in the food-processing industry.



## KLüber Summit® R 100, R 200, R 300, R 500, R 600

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### Application notes

Drain old oil from whole circuit of the refrigeration compressor while still warm. We recommend changing all oil filters and separators and draining the oil catches of the refrigeration cycle completely. Then recharge compressor with the operational Klüber Summit R series lubricant.

### Pack sizes

19 l plastic canister  
208 l steel drum

### Material Safety Data Sheets

Material safety data sheets can be downloaded or requested via our website [www.klueber.com](http://www.klueber.com). You may also obtain them through your contact person at Klüber Lubrication.

### Minimum shelf life

The minimum shelf life is approx. 36 months if the product is stored in its unopened original container in a dry, frost-free place.

KLüber Summit	R 100	R 200	R 300	R 500	R 600
Color, aspect	colorless, clear	colorless, clear	colorless, clear	colorless, clear	colorless, clear
Density, DIN 51 757, at 20 °C, [g/cm <sup>3</sup> ], approx.	0.83	0.83	0.84	0.85	0.85
Kinematic viscosity, DIN 51562, pt. 1, at 40 °C, [mm <sup>2</sup> /s], approx. 100 °C, [mm <sup>2</sup> /s], approx.	32 5.9	68 10.0	100 14.5	220 26.0	402 41.0
Pour point, DIN ISO 3016, [°C]	≤ -60	≤ -45	≤ -39	≤ -34	≤ -27
Flash point, DIN ISO 2592, [°C]	≥ 230	≥ 230	≥ 240	≥ 255	≥ 276
Viscosity index, DIN ISO 2909	≥ 120	≥ 130	≥ 138	≥ 140	≥ 140

\* Service temperatures are guide values which depend on the lubricant's composition, the intended use and the application method. Lubricants change their consistency, apparent dynamic viscosity or viscosity depending on the mechano-dynamical loads, time, pressure and temperature. These changes in product characteristics may affect the function of a component.

### Lubrication is our world

With more than 2000 products available around the world, you can be sure that Klüber has the right product for your application. Please contact Klüber Lubrication specialists worldwide to assist you in all matters regarding lubrication.

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

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