Klüberfood 4 NH1- 15...100

Synthetic hydraulic oils for the food and pharmaceutical industries

Your benefits at a glance

- Fully synthetic base oil to support extended oil change intervals and reduced operating cost in hydraulic systems
- Reduced contaminant build up and valve blockages compared to mineral hydraulic oils as a result of the improved oil stability
- NSF H1 registered supporting process reliability

Your requirements - our solution

Klüberfood 4 NH 1-15...100 oils are hydraulic oils based on synthetic hydrocarbons. Klüberfood NH 1 oils offer good oxidation stability due to the synthetic base oil, also good stability at low temperatures and protection against friction and wear. They meet HLP requirements acc. to DIN 51524 part 2.

Apart from their excellent corrosion stability, Klüberfood 4 NH 1 oils have a good water separation ability.

Klüberfood 4 NH 1-15...100 oils are NSF H1 registered and therefore comply with FDA 21 CFR § 178.3570. The lubricants were developed for incidental contact with products and packaging materials in the food-processing, cosmetics, pharmaceutical or animal feed industries. The use of Klüberfood 4 NH 1-15...100 oils can contribute to increase reliability of your production processes. We nevertheless recommend conducting an additional risk analysis, e.g. HACCP.

Application

Klüberfood 4 NH 1 hydraulic oils are used especially in the food-processing and pharmaceutical industries.

Application notes

Klüberfood 4 NH 1 oils are miscible with mineral-oil based hydraulic fluids, however we recommend flushing the system with a suitable Klüberfood 4 NH 1 oil prior to initial application in order to comply with food regulations.

Flushing at 50 to 60°C removes residues in the hydraulic installation and used oil in the system. Then we recommend changing the filters before putting the hydraulic oil into operation again with the Klüberfood 4 NH 1 oil.

Materials compatibility

According to our current status of knowledge Klüberfood 4 NH 1 oils are compatible with all materials, which are resistant to mineral oil, e.g. neoprene, NBR, FPM, PTFE, paints based on acrylic and epoxy resin, nylon (polyamide) and PVC.

Material safety data sheets

Material safety data sheets can be requested via our website www.klueber.com. You may also obtain them through your contact person at Klüber Lubrication.

Pack sizes	Klüberfood 4 NH1-15	Klüberfood 4 NH1-32	Klüberfood 4 NH1-46	Klüberfood 4 NH1-68
Canister 1 l		+	+	
Canister 5 l				+
Canister 20 l	+	+	+	+
Drum 200 l	+	+	+	+
Drum 208 l				+
Container 1000 l		+	+	+

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Drum 208 l	
Container 1000 l	+

Characteristics	Klüberfood 4 NH1-15	Klüberfood 4 NH1-32	Klüberfood 4 NH1-46	Klüberfood 4 NH1-68
Article number	050163	050067	050068	050069
Appearance	clear	clear	clear	clear
Colour space	colourless	yellow	yellow	yellow
Service temperature, lower limit	-45 °C	-45 °C	-40 °C	-40 °C
Service temperature, upper limit	100 °C	135 °C	135 °C	135 °C
Designation, DIN 51502		HLP HC 32	HLP HC 46	HLP HC 68
NSF H1 registration number	154666	137442	137443	137444
Demulsifying capacity, DIN ISO 6614 /ASTM D1401, 54°C	40-37-3 (30) ml (min)	40-37-3 (30) ml (min)	40-37-3 (30) ml (min)	40-37-3 (30) ml (min)
Demulsifying capacity, DIN ISO 6614 /ASTM D1401, 82°C				
Density, DIN 51757, 20°C	approx. 0.82 g/cm³	approx. 0.83 g/cm³	approx. 0.83 g/cm³	approx. 0.83 g/cm³
Flash point, DIN EN ISO 2592, Cleveland open cup	≥ 180 °C	≥ 230 °C	≥ 240 °C	≥ 240 °C
Foam test, ISO 6247 / ASTM D892, 24°C, sequence I	≤ 150/0 ml	≤ 150/0 ml	≤ 150/0 ml	≤ 150/0 ml
Foam test, ISO 6247 / ASTM D892, 24°C, sequence III	≤ 150/0 ml	≤ 150/0 ml	≤ 150/0 ml	≤ 150/0 ml
Foam test, ISO 6247 / ASTM D892, 93.5°C, sequence II	≤ 75/0 ml	≤ 75/0 ml	≤ 75/0 ml	≤ 75/0 ml
Kinematic viscosity, DIN EN ISO 3104 / DIN 53000-1, based on standard / ASTM D445 / ASTM D7042, 100°C	approx. 3.5 mm²/s	approx. 5.8 mm²/s	approx. 7.7 mm²/s	approx. 10.4 mm²/s
Kinematic viscosity, DIN EN ISO 3104 / DIN 53000-1, based on standard / ASTM D445 / ASTM D7042, 40°C	approx. 15 mm²/s	approx. 32 mm²/s	approx. 46 mm²/s	approx. 68 mm²/s
Viscosity index, DIN ISO 2909	≥ 105	≥ 120	≥ 120	≥ 120
Pour point, DIN ISO 3016, ASTM D97, ASTM D5950, ASTM D7346	≤ -65 °C	≤ -50 °C	≤ -45 °C	≤ -45 °C

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Characteristics	Klüberfood 4 NH1-15	Klüberfood 4 NH1-32	Klüberfood 4 NH1-46	Klüberfood 4 NH1-68
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 months	60 months	60 months	60 months

Characteristics	Klüberfood 4 NH1-100
Article number	050070
Appearance	clear
Colour space	yellow
Service temperature, lower limit	-35 °C
Service temperature, upper limit	135 °C
Designation, DIN 51502	HLP HC 100
NSF H1 registration number	137441
Demulsifying capacity, DIN ISO 6614 /ASTM D1401, 54°C	
Demulsifying capacity, DIN ISO 6614 /ASTM D1401, 82°C	40-37-3 (60) ml (min)
Density, DIN 51757, 20°C	approx. 0.84 g/cm³
Flash point, DIN EN ISO 2592, Cleveland open cup	≥ 240 °C
Foam test, ISO 6247 / ASTM D892, 24°C, sequence I	≤ 150/0 ml
Foam test, ISO 6247 / ASTM D892, 24°C, sequence III	≤ 150/0 ml
Foam test, ISO 6247 / ASTM D892, 93.5°C, sequence II	≤ 75/0 ml
Kinematic viscosity, DIN EN ISO 3104 / DIN 53000-1, based on standard / ASTM D445 / ASTM D7042, 100°C	approx. 13.8 mm²/s
Kinematic viscosity, DIN EN ISO 3104 / DIN 53000-1, based on standard / ASTM D445 / ASTM D7042, 40°C	approx. 100 mm²/s
Viscosity index, DIN ISO 2909	≥ 120
Pour point, DIN ISO 3016, ASTM D97, ASTM D5950, ASTM D7346	≤ -40 °C
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 months

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Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our ambitious technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 95 years.

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