

Klüberpharma UH1 4-220, 4-460

Special synthetic lubricating oils for the pharmaceutical industry



Benefits for your application

- **NSF H1 registered and therefore in compliance with FDA 21 CFR § 178.3570.**
- **NSF ISO 21469 certified – supports compliance with the hygienic requirements of your production. You will find further information about ISO Standard 21469 on our website www.klueber.com.**
- **Compatible with bronze. Reduction in tablet contamination problems (due to incompatibility of bronze with oil) previously occurring in the form of black abrasion particles.**

Description

Klüberpharma UH1 4-220/4-460 are specially designed synthetic lubricating oils for the lubrication of steel punches and bronze guides in pharmaceutical tablet presses, especially in the field of high-performance manufacture of tablets.

These lubricating oils offer good wear protection, thus extending the service life of components, as confirmed by oscillation friction wear tests according to DIN E 51834. They also reduce the friction coefficient during start-up of tablet presses and offer improved resistance to bronze. This special property enables a significant reduction in tablet contamination problems occurring in the form of black abrasion particles. Klüberpharma UH1 4-220 has been used very successfully by leading tablet manufacturers for the lubrication of tablet punches.

Klüberpharma UH1 4-220/4-460 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 Klüberpharma UH1 4-220/4-460 can contribute to increase reliability of your production processes. We nevertheless recommend conducting an additional risk analysis, e.g. HACCP.

Application

Klüberpharma UH1 4-220/4-460 oils are used for the lubrication of the upper and lower punches and bronze guides in tablet presses.

Material / friction combinations:

Upper punches made of hardened steel (e.g. 1.23.63) operating against cast iron (e.g. GGG 40).

Guide rails made of bronze (e.g. 2.0980.03)

Lower punches made of hardened steel (e.g. 1.23.63) operating against cast iron (e.g. GGG 40).

Application notes

Please observe the machine manufacturer's instructions on oil temperature and viscosity selection in the lube chart.

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	Klüberpharma UH1 4-220	Klüberpharma UH1 4-460
Canister 5 l	+	+
Canister 20 l	+	+
Drum 200 l	+	-



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Product data	Klüberpharma UH1 4-220	Klüberpharma UH1 4-460
Article number	029014	029065
NSF-H1 registration	122 863	143 071
Lower service temperature	-15 °C / 5 °F	-15 °C / 5 °F
Upper service temperature	110 °C / 230 °F	110 °C / 230 °F
Colour space	yellow	yellow
Appearance	slightly turbid	clear
Density, DIN 51757, 20 °C	approx. 0.85 g/cm ³	approx. 0.87 g/cm ³
Flash point	>= 200 °C	>= 220 °C
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C	approx. 220 mm ² /s	approx. 460 mm ² /s
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 100 °C	approx. 28 mm ² /s	approx. 50 mm ² /s
ISO viscosity grade, DIN ISO 3448	220	460
Viscosity index, DIN ISO 2909	>= 140	>= 160
Pour point, DIN ISO 3016	<= -15 °C	<= -20 °C
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	24 months	24 months

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 80 years.

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