

# Klüberalfa HPX 93-1202

High-temperature lubricant for extreme requirements



## Your benefits at a glance

- Higher plant availability and less maintenance
  - at very high operating temperatures up to 300 °C or under certain circumstances even up to 360 °C
  - when exposed to aggressive chemicals and vapours
  - when used in combination with plastics and sealing materials
- Successfully used in numerous industries and components
  - due to a base oil designed for long-term stability
  - NSF H1 registered and ISO 21469 certified - supports compliance with the hygienic requirements in your production plant.
  - Low noise and smooth running due to excellent damping behaviour

## Your requirements - our solution

For your demanding and sensitive application, you need a lubricant of maximum quality and with excellent performance characteristics. Your application requires a lubricant for extremely high temperatures up to 300 °C. It must not be negatively affected by aggressive media, greases or water vapour.

Klüberalfa HPX 93-1202 is based on tightly specified raw materials. Its production and the inspection of the final product are subject to strict controls. The combination of highly stable PFPE oils and inorganic thickeners meets these tough requirements. Klüberalfa HPX 93-1202 combines convincing high thermal stability and resistance to aggressive media with good compatibility with plastics and elastomers.

## Application

### Extensions and sliding rails in automatic and other baking ovens

Our expertise in the development of high-temperature lubricants is based on several decades of experience gained in collaboration with international manufacturers of household appliances. This experience has been tapped for the development of Klüberalfa HPX 93-1202.

Klüberalfa HPX 93-1202 is a fully synthetic high-temperature grease and is preferably used for automatic and other industrial and household baking ovens. It improves the functional capabilities of sliding rails, hinges, locking systems, joints and other elements at low speed and very high temperatures. This enables you as an operator to benefit from long-term lubrication in combination with good damping even at extremely high temperatures. Extensions and sliding rails work smoothly and without noise even after years of use. Relubrication is rarely required, if at all.

At temperatures up to 300 °C, Klüberalfa HPX 93-1202 does not release any substances which might compromise the food product physiologically or affect its taste.

Klüberalfa HPX 93-1202 is made without PTFE, registered as NSF H1 and complies with FDA 21 CFR § 178.3570. It was developed for incidental contact with products and packaging materials in the food-processing, cosmetics, pharmaceutical or animal feed industries. The use of Klüberalfa HPX 93-1202 can contribute to increased reliability of your production processes. Nevertheless it is recommended to conduct an additional risk analysis, e.g. HACCP.

Klüberalfa HPX 93-1202 is generally regarded as resistant to most chemicals and solvents.

The lubricant is therefore not expected to be negatively affected by cleaning agents.

### Friction points exposed to high temperatures

One of the product's particular strong points is the lubrication of slow-running rolling bearings and guideways at temperatures up to 300 °C. The low evaporation rate enables long grease life and long relubrication intervals. Typical fields of application include

- conveyor systems, e.g. in the textile industry
- tapered roller bearings, e.g. in thin-film evaporators

Klüberalfa HPX 93-1202 is designed for use up to 300 °C, however with periodic relubrication it can normally also be used at even higher temperatures up to 360 °C. At temperatures above 300 °C, normally thermal degradation of the extremely stable PFPE oil sets in. Workplaces should therefore be laid out in such a way that any gases released can escape so as not to contaminate the workplace.

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For application temperatures above 300 °C, consultation with our experts is particularly recommended.

For further information on the degradation of PFPE, please see the material safety data sheet.

## Friction points exposed to media

Klüberalfa HPX 93-1202 attains excellent service life also when exposed to most aggressive media such as concentrated acidic or alkaline solutions, organic solvents and gases. Combined with their convincing adhesive and sealing characteristics, this qualifies Klüberalfa HPX 93-1202 for applications where resistance to media is explicitly required, e.g. in the chemical industry. Due to its high pressure absorption capacity, constant friction coefficients over a wide temperature range and excellent resistance to media, the product is preferably used for valves and fittings, in chemical systems and installations.

## Behaviour towards elastomers and plastics:

Lubricants based on fluorinated polyether oils are generally regarded as neutral towards most elastomers and plastics (exception: perfluorinated rubber). Nevertheless we recommend testing

compatibility with the material to be used, especially prior to series application.

## Application notes

For optimum lubrication results, we recommend cleaning the friction points with white spirit 180/210 followed by Klüberalfa XZ 3-1 before using Klüberalfa HPX 93-1202 for the first time. After this, treat the friction point with clean, dry compressed air or hot air in order to remove the white spirit residue-free.

For initial lubrication, the friction points must be clean and bright, i.e. free from oil, grease, perspiration and contamination.

To optimise the service life of your equipment or if you have any other questions regarding your application, our experts will be pleased to help you.

## Material safety data sheets

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

Pack sizes	Klüberalfa HPX 93-1202
Cartridge 800 g	+
Can 1 kg	+
Bucket 10 kg	+
Bucket 30 kg	+

Characteristics	Klüberalfa HPX 93-1202
Article number	090026
Composition, solid lubricant	solid lubricant
Composition, type of oil	PFPE
Service temperature, lower limit	-20 °C
Service temperature, upper limit	300 °C
NSF H1 registration number	138460
Density, Klüber method: PN 024, 20°C	approx. 1.9 g/cm <sup>3</sup>
Vapour pressure, 20°C	approx. 5.33x10 <sup>-17</sup> hPa
NLGI grade, DIN 51818	2
Kinematic viscosity of the base oil, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 100°C	approx. 100 mm <sup>2</sup> /s

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Characteristics	Klüberalfa HPX 93-1202
Kinematic viscosity of the base oil, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 40°C	approx. 1200 mm <sup>2</sup> /s
Water resistance, DIN 51807-1, 3 h, 90°C	≤ 1 - 90 rating
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	60 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 90 years.

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The data in this document is based on our general experience and knowledge at the time of publication and is intended to give information of possible applications to a reader with technical experience. It constitutes neither an assurance of product properties nor does it release the user from the obligation of performing preliminary field tests with the product selected for a specific application. All data are guide values which depend on the lubricant's composition, the intended use and the application method. The technical values of lubricants change depending on the mechanical, dynamical, chemical and thermal loads, time and pressure. These changes may affect the function of a component. We recommend contacting us to discuss your specific application. If possible we will be pleased to provide a sample for testing on request. Klüber products are continually improved. Therefore, Klüber Lubrication reserves the right to change all the technical data in this document at any time without notice.

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