

# Klüberalfa GR Y VAC 1, VAC 2, VAC 3

Special greases for vacuum applications



## Benefits for your application

- Low evaporation under vacuum conditions
- High thermal stability
- Good resistance to aggressive media
- Neutral towards plastic materials

## Description

Klüberalfa GR Y VAC greases are white, homogeneous long-term greases based on perfluorinated polyether (PFPE) oils and polytetrafluoroethylene (PTFE) thickener. Besides their good resistance to high temperature and aggressive media, Klüberalfa GR Y VAC greases show low evaporation under vacuum conditions.

Klüberalfa GR Y VAC greases are made in three different NLGI classes, allowing component-specific selection for lifetime lubrication.

## Application

Klüberalfa GR Y VAC are preferred greases for applications under vacuum, e.g. in components of the electro-mechanical industry.

### Behaviour towards elastomers and plastics

Lubricants based on perfluorinated polyether oils and polytetrafluoroethylene 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. Then blow the surfaces with clean, dry compressed air or hot air to remove solvent residues. For initial lubrication, the friction points must be clean and bright, i.e. free from oil, grease and perspiration. Klüberalfa GR Y VAC greases are applied directly or by means of brush, spatula or lubricant dispenser.

The technical sales departments at Klüber Lubrication may be contacted at any time for advice to ensure optimum service life results.

## 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® GR Y VAC 1	Klüberalfa® GR Y VAC 2	Klüberalfa® GR Y VAC 3
Tube 100 g	+	+	+
Can 1 kg	+	+	-

Product data	Klüberalfa® GR Y VAC 1	Klüberalfa® GR Y VAC 2	Klüberalfa® GR Y VAC 3
Article number	090188	090189	090190
NLGI grade, DIN 51818		2	3
Chemical composition, type of oil	PFPE	PFPE	PFPE
Chemical composition, solid lubricant	PTFE	PTFE	PTFE
Lower service temperature	-20 °C / -4 °F	-20 °C / -4 °F	-20 °C / -4 °F



# Klüberalfa GR Y VAC 1, VAC 2, VAC 3

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Product data	Klüberalfa® GR Y VAC 1	Klüberalfa® GR Y VAC 2	Klüberalfa® GR Y VAC 3
Upper service temperature	250 °C / 482 °F	250 °C / 482 °F	250 °C / 482 °F
Colour space	white	white	white
Texture	homogeneous	homogeneous	homogeneous
Density at 20 °C	approx. 1.90 g/cm <sup>3</sup>	approx. 1.9 g/cm <sup>3</sup>	approx. 1.90 g/cm <sup>3</sup>
Worked penetration, DIN ISO 2137, 25 °C, lower limit value	310 x 0.1 mm	265 x 0.1 mm	220 x 0.1 mm
Worked penetration, DIN ISO 2137, 25 °C, upper limit value	340 x 0.1 mm	295 x 0.1 mm	250 x 0.1 mm
Oil separation, based on ASTM D 6184 [FTMS 791 C 321], after 30 h/200 °C	<= 14 % by weight	<= 12 % by weight	<= 10 % by weight
Evaporation loss, ASTM D 2595 22h/204°C	<= 1 % by weight	<= 1 % by weight	<= 1 % by weight
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

## 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.

**Klüber Lubrication München SE & Co. KG / Geisenhausenerstraße 7 / 81379 München / Germany / phone +49 89 7876-0 / fax +49 89 7876-333.**

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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