

# Klüber Tyreno Fluid 3-6HV, 6-14HV, 12-25HV

High-performance vacuum pump oils for fine- and high-vacuum applications



## Your benefits at a glance

- **High operational reliability in vacuum pumps due to**
  - exceptionally low oil vapour pressure
  - very low tendency to thermal ageing
  - good chemical stability against aggressive media

## Your requirements - our solution

Klüber Tyreno Fluids have been designed to meet the special requirements of modern vacuum pumps. Klüber Tyreno Fluids 3/6 HV, 6/14 HV, 12/25HV are perfluorinated polyether oils (PFPE) which are available in different viscosities and show particularly high chemical stability.

They can be used whenever aggressive media must be pumped (e.g. oxygen, halogens) and / or high-vacuum conditions (e.g. multiple-stage pumps) prevail. Klüber Tyreno Fluids offer high resistance to a wide range of chemicals.

## Application

Klüber Tyreno Fluids are tried-and-tested as filling fluids in mechanical backing pumps, diffusion pumps and turbomolecular pumps. They have also proven to be effective as vapour-resistant, chemically inert transmission fluids in dry-running screw-type pumps.

### Behaviour towards metal, elastomers and plastics

Klüber Tyreno Fluid 3/6HV, 6/14HV, 12/25HV can generally be classified as neutral towards metallic materials, plastics and rubber-elastic materials within the given temperature range. Nevertheless, we recommend checking the compatibility of the products with materials in contact prior to series application.

## Application notes

All surfaces to be wetted must be thoroughly cleaned prior to product application. The friction / lubrication points of surfaces / components must be clean and bright (i.e. free from oil, grease, dirt particles or perspiration). It has proven advantageous to clean the surfaces with clean white spirit and then Klüberalfa XZ 3-1, ensuring residue-free surfaces when dried.

For optimised service life, please contact our service engineers.

## 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	Klüber Tyreno Fluid 3/6HV	Klüber Tyreno Fluid 12/25HV	Klüber Tyreno Fluid 6/14HV
Canister 1 l	-	+	+

  

Product data	Klüber Tyreno Fluid 3/6HV	Klüber Tyreno Fluid 12/25HV	Klüber Tyreno Fluid 6/14HV
Article number	130087	130042	130105
Chemical composition, type of oil	PFPE	PFPE	PFPE
Lower service temperature	-50 °C / -58 °F	-40 °C / -40 °F	-45 °C / -49 °F
Upper service temperature	120 °C / 248 °F	180 °C / 356 °F	150 °C / 302 °F
Colour space	colourless	colourless	colourless
Appearance	clear	clear	clear
Density, DIN 51757, 20 °C	approx. 1.89 g/cm <sup>3</sup>	approx. 1.89 g/cm <sup>3</sup>	approx. 1.89 g/cm <sup>3</sup>



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Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 20 °C, lower limiting value	65 mm <sup>2</sup> /s	290 mm <sup>2</sup> /s	170 mm <sup>2</sup> /s
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 20 °C, upper limiting value	75 mm <sup>2</sup> /s	320 mm <sup>2</sup> /s	200 mm <sup>2</sup> /s
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C, lower limiting value	26 mm <sup>2</sup> /s	85 mm <sup>2</sup> /s	54 mm <sup>2</sup> /s
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C, upper limiting value	30 mm <sup>2</sup> /s	105 mm <sup>2</sup> /s	66 mm <sup>2</sup> /s
Vapour pressure at 20 °C	<= 7,5 x 10 <sup>-7</sup> Torr	<= 7,5 x 10 <sup>-9</sup> Torr	<= 1 x 10 <sup>-7</sup> Torr
Pour point, DIN ISO 3016	<= -50 °C	<= -40 °C	<= -45 °C
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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