

Klübertemp YV 93-302

Sliding agent for valves, fittings and installations carrying oxygen up to medium partial pressure



Your benefits at a glance

- High operational reliability for installations and components used with gaseous oxygen due to
 - medium oxygen pressure surge resistance (see product data)
 - compatibility with most materials used in this industry
 - a wide service temperature range
- Each product batch is checked for its reactivity to oxygen

Your requirements - our solution

Klübertemp YV 93-302 is a white sliding agent with good wetting ability based on perfluorinated polyether, solid lubricants and PTFE.

It offers medium oxygen pressure surge resistance and high resistance to a wide range of chemicals. To ensure continuous adherence to this high quality standard, Klübertemp YV 93-302 is manufactured in small series subject to strict hygiene requirements and each batch is inspected according **ISO 21010** (following to M 034-1 list of nonmetallic materials (213-075)).

Application

Klübertemp YV 93-302 is a tried-and-tested sliding agent for all friction points with low to medium requirements and in combination with all materials used in gaseous oxygen installations.

The wide service temperature range underlines the universal application possibilities of this sliding agent. We recommend users conduct their tests using the complete component under conditions similar to series application.

The product's high pressure-absorption capacity and consistent friction values over a wide temperature range ensure constant actuation forces.

Test results show the product's usability for an O₂ content > 21 % by vol. under the operating conditions specified in the product data section of this product information leaflet.

Possible applications are:

- Oxygen valves
- Peripheral aggregates of chemical installations
- Hose couplings, e.g. oxygen pipe connections, sliding and plain bearings, bolts, slideways, etc.
- Steel and heavy industry
- Assembly aid for most rubber-elastic materials and plastics

- For the industrial handling, maintenance and care of oxygen components

Behaviour towards metals, elastomers and plastics

Klübertemp YV 93-302 is normally neutral towards metallic materials, plastics and elastomers within the given temperature range. Nevertheless, we recommend checking the compatibility of the sliding agent with materials in contact prior to its introduction.

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). We recommend cleaning the surfaces with clean white spirit and then Klüberalfa XZ 3-1, ensuring residue-free surfaces when dried. For valves and installations carrying oxygen, the application procedure must also be "oxygen clean" in order to attain a "ready for oxygen service" condition.

*Notes on the lower service temperature limit (see product data):

The service temperature is defined on the basis of physical and mechanical-dynamic product characteristics. If the product is intended to be used below the lower service temperature limit, it has to be checked if reliable operation of the component is ensured under these conditions. In cases of doubt, application-specific tests would have to be performed.

**Notes on the upper service temperature limit (see product data):

The service temperature is defined on the basis of physical and mechanical-dynamic product characteristics. When working in an atmosphere with added oxygen and/or under high oxygen partial pressure, the upper service temperature limit may be reduced due to a reaction with oxygen. To assess whether use in a particular

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application is safe, please refer to the product data section in this product information leaflet. In cases of doubt, application-specific tests would have to be performed.

Safety advice:

The resistance to oxygen was determined with the unused, contamination-free product. If the product is decomposed during use due to physical (temperature, electric discharge, pressure surges) or chemical influence or contaminated by foreign substances (e.g. easily oxidisable organic or inorganic materials, particularly iron metals, magnesium, aluminium, titanium or their alloys, e.g. rubbed-off particles, contamination from the environment), decomposition

products or foreign substances can be generated which clearly reduce oxygen resistance. Furthermore, operating conditions have a major impact on the lubricant's behaviour in the application. Therefore, it can be necessary or prescribed to conduct own safety-relevant examinations on the equipment or lubricated component.

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 | Klübertemp YV 93-302 |
|------------|----------------------|
| Can 1 kg | + |
| Can 180 g | + |

| Characteristics | Klübertemp YV 93-302 |
|---|--------------------------------|
| Article number | 013063 |
| Composition | solid lubricant |
| Composition, type of oil | PFPE |
| Colour space | white |
| Texture | homogeneous |
| Service temperature, lower limit | -60 °C |
| Service temperature, upper limit | 200 °C |
| NSF H1 registration number | 158126 |
| Density, Klüber method: PN 024, 20°C | approx. 2.00 g/cm ³ |
| Worked penetration, DIN ISO 2137 / ASTM D217, 25°C, lower limit | 265 0.1 mm |
| Worked penetration, DIN ISO 2137 / ASTM D217, 25°C, upper limit | 295 0.1 mm |
| Shear viscosity, Klüber method: PN 008@DIN 53019-1, equipment: rotational viscometer, 25°C, 300 s ⁻¹ | approx. 7500 mPas |
| Copper corrosion, DIN 51811, 24 h, 100°C | 1 - 100 - 24 corrosion degree |
| Flow pressure, DIN 51805-2, -60°C | ≤ 1400 mbar |
| Upper oxygen pressure limit up to a maximum operating temperature, ISO 21010, 60°C, reactivity when exposed to oxygen pressure surges | 100 bar |
| 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 90 years.

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