

# Klüberplus S 04-807

Water-dilutable, high-temperature dispersion for screws and bolts



## Description

Klüberplus S 04-807 is a grey, thermosetting dispersion based on special solid lubricants and an inorganic, water-dilutable binder. Klüberplus S 04-807 is fluid, ready-to-use and non-flammable.

Once hardened, it forms a dry lubricating film which offers

- a wide service temperature range
- good adhesion even on high-alloy steels
- a low friction coefficient
- good release of screws and bolts even when exposed to high and long thermal stress
- clean handling of coated screws.

## Application

Dispersion for screws and bolts, particularly for high-temperature/high-alloy steels up to 1000°C.

Dry and clean alternative to high-temperature screw pastes, e.g. for screw fittings in turbochargers or similar applications.

## Notes on application

Stir or shake Klüberplus S 04-807 well before applying it by spraying, immersion, dip/spin or barrel coating.

### *Spraying*

Feed pressure: 2 bar  
Spray distance: approx. 20 cm  
Nozzle diameter: 0.5 – 0.8 mm

Ensure that only oil-and water-free compressed air is used.

When spraying systems are used, an agitator should be installed in the container in order to prevent the solid particles from settling.

In the case of applying the product by immersion, use special steel or plastic containers.

The recommended layer thickness for tribological applications is approx. 7 to 15 µm.

Roughening (sand blasting) of the component's surface improves adhesion of Klüberplus S 04-807.

## Klüberplus S 04-807

- Water-dilutable dispersion, especially for high-temperature / high-alloy steels up to 1000°C
- Good release of screws even when exposed to high and long thermal stress
- Dry-to-the touch lubricating film
- Low friction coefficient

Klüberplus S 04-807 is dry to the touch after approx. 15 min. at 20°C and hardens in 15 min. at 180°C. All temperatures indicated are component temperatures.

### *Service temperature range\**

For the water-free and hardened lubricating film we recommend a service temperature range of approx. –40 to 1000°C.

### **Minimum shelf life**

The minimum shelf life is approx. 12 months if the product is stored in the original closed container in a dry place at 20°C.

Protect from frost and heat. If frozen, let the product thaw at room temperature and stir thoroughly.

# Klüberplus S 04-807

Water-dilutable, high-temperature dispersion for screws and bolts

## Pack sizes

1 l PE can  
15 l bucket

zinc phosphated, nuts M 10 - 8,  
bright and degreased, surface  
material 42 Cr Mo 4  
(mit  $R_a = 1,6 \mu\text{m}$ ), tightening speed  
factor  $n = 5 \text{ min}^{-1}$ , tightening torque  
 $M_A = 50 \text{ Nm}$ , number of screws: 20

## Explanation:

$\mu_{K,m}$  = friction coeff. of screw head  
(average initial tightening)

$\mu_{G,m}$  = average friction coeff. of  
thread (initial tightening)

S = standard deviation

## Friction coefficients

Determined on Erichsen test rig AP  
541, screws M 10 x 30 – 8.8, black,  
DIN EN 24017,

$\mu_{K,m} = 0.135$

S = 0.006

$\mu_{G,m} = 0.138$

S = 0.028

## Product data

Colour	grey
Density, DIN 51757, at 20 °C, g / ml, approx.	1.38
Runout time, DIN EN ISO 2431, flow cup, nozzle 4 mm, s, approx.	30
Service temperature range* of the solvent-free lubricating film, °C, approx.	-40 to 1000
Yield with a layer thickness of 10 $\mu\text{m}$ , $\text{m}^2 / \text{l}$ , approx.	20

\* Service temperatures are guide values which depend on the lubricant's composition, the intended use and the application method. Lubricants change their consistency, apparent dynamic viscosity or viscosity depending on the mechano-dynamical loads, time, pressure and temperature. These changes in product characteristics may affect the function of a component.

# Klüberplus® S 04-807

## Safety Data Sheet

<b>1.1 Product name: Klüberplus S 04-807</b> Code-No.: 099 013 <b>06.03.2001</b>
<b>1.2</b> Klüber Lubrication München KG Geisenhausenerstraße 7 D-81379 München Tel. ++49 - 89 78 76 - 0 telephone exchange Fax: ++49 - 89 78 76 - 333 <b>Emergency telephone no.:</b> <b>++49 - 89 7876 - 0</b>
<b>2. Composition / information on ingredients</b> Chemical characterization (preparation): Aqueous suspension of solid lubricant
<b>3. Hazards identification</b> No particular hazards known
<b>4. First aid measures</b> After inhalation: Not applicable After contact with skin: Wash off with soap and plenty of water After contact with eyes: Rinse with plenty of water After ingestion: Do not induce vomiting. Obtain medical attention Advice to doctor: Treat symptomatically
<b>5. Fire-fighting measures</b> Suitable extinguishing media: The product itself does not burn. Use extinguishing measures that are appropriate to the environment Special Hazards: None Special protective equipment for firefighters: No special precautions required Additional information: None
<b>6. Accidental release measures</b> Personal precautions: Risk of slipping due to leakage/spillage of product Environmental precautions: Do not flush into surface water Methods for cleaning up / taking up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dispose of absorbed material in accordance with the regulations Additional information: None
<b>7. Handling and storage</b> Advice on safe handling: No special handling advice required Advice on protection against fire and explosion: No special precautions required Requirements on storage rooms and vessels: Unsuitable materials: Steel Incompatible materials: Do not store together with food. Incompatible with strong acids and bases Further information on storage conditions: Store at room temperature in the original container
<b>8. Exposure controls / personal protection</b> Additional advice on system design: Not applicable Ingredients and specific control parameters: None Respiratory protection: No special protective equipment required Hand protection: No special protective equipment required Eye protection: No special protective equipment required Body protection: No special protective equipment required Other protection measures: No special protective equipment required General protection and hygiene measures: Avoid prolonged and/or repeated contact with skin. Clean skin thoroughly after work; apply skin cream

<b>9. Physical and chemical properties</b> Form: liquid Colour: grey Odour: none Boiling point: ~ 100 °C Flash point: none, DIN ISO 2592 Ignition temperature: not applicable Lower explosion limit: not applicable Upper explosion limit: not applicable Vapour pressure-first: not applicable Density: approx. 1.38 g/cm <sup>3</sup> , 20 °C, DIN 51 757 Water solubility: miscible pH value: no data available, DIN 51 369 Outdoor time: approx. 30 s, DIN EN ISO 2431 Further information: Run-out time (DIN-cup) determined with nozzle: 4 mm
<b>10. Stability and reactivity</b> Conditions to avoid: None Materials to avoid: Strong acids and strong bases Hazardous decomposition products: None under normal use Additional information: None
<b>11. Toxicological information</b> The toxicological data has been taken from products of similar composition Acute toxicity: LD <sub>50</sub> /oral/rat = > 2 g/kg (literature data) Chronic toxicity: None Human experience: Prolonged skin contact may cause skin irritation and/or dermatitis
<b>12. Ecological information</b> Information on elimination (persistence and degradability): The product has not been tested Behaviour in environmental compartments: Ecological injuries are not known or expected under normal use Ecotoxic effects: The product has not been tested Additional information: Do not discharge product unmonitored into the environment
<b>13. Advice on Disposal</b> Disposal: Can be landfilled after chemical and physical treatment, when in compliance with the national regulations Dispose of contaminated packaging and recommended cleaning: Offer rinsed packaging material to local recycling facilities
<b>14. Transport information</b> GGVS / GGVE: not applicable ADN / ADN R: not applicable IMDG-Code: not applicable ICAO / IATA-DGR: not applicable Further information: Not classified as dangerous in the meaning of transport regulations
<b>15. Regulatory information</b> Labelling according to EU-guidelines: The product does not require a hazard warning label in accordance with EC-directives/German regulations on dangerous substances National regulations
<b>16. Other information</b> Issue-department of Safety Data Sheet: Chemical Documentation, Tel.: ++49 - 89 7876 - 564

The data in this product information is based on our general experience and knowledge at the time of printing 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 tests with the selected product. We recommend contacting our Technical Consulting Staff to discuss your specific application. If required and possible we will be pleased to provide a sample for testing. Klüber products are continually improved. Therefore, Klüber Lubrication reserves the right to change all the technical data in this product information at any time without notice.



Klüber Lubrication München KG, a member of the Freudenberg group