Klübersynth® GE 46-1200
Synthetic Long-Term Gear Grease

Description

Klübersynth GE 46-1200 is a synthetic long-term gear grease suitable for a wide temperature range. It does not contain lead or solid lubricants, has a high load-carrying capacity and offers excellent protection against wear and corrosion.

Application

Klübersynth GE 46-1200 was developed especially for the lubrication of spur gears, bevel gears and worm gears with material pairings steel/steel (e.g. gear motors, small gears, gears in electric tools). Furthermore, Klübersynth GE 46-1200 can also be used for the lubrication of ball and roller guides, rolling and sliding bearings as well as toothed couplings.

The dynamic stresses (sliding speed and high loads) the contact surfaces of design elements made of *aluminium* or *aluminium alloys* are exposed to may lead to increased wear. If necessary, wear tests should be carried out.

Notes on Application

Splash lubrication of gears operating at circumferential speeds up to approx. 8 m/s or greasing of the tooth flanks of small gears.

The operating temperature range of Klübersynth GE 46-1200 for splash lubrication lies between -30 °C and +120 °C. Adequate lubrication properties are ensured down to -50 °C.

The values indicated here are orientative values which depend on the composition of the lubricant as well as the types and methods of application it is intended for.

Compatibility with Elastomers

72 NBR 902, 100 °C, 168 hrs:

Change in volume	[%]	< +3
Change in hardness	[Shore A]	approx. -3

Storage

Store in closed package in a cool and dry place.

Package

1 kg	can
25 kg	bucket
180 kg	drum

Klübersynth GE 46-1200

- Synthetic long-term gear grease
- Wide temperature range
- Protects effectively against corrosion
- Does not contain lead or solid lubricants
- High load-carrying capacity
- Offers excellent protection against wear

Characteristic Data

Color, appearance		brown
Texture		homogeneous
Density DIN 51 757 at 20 °C	[g/ml]	approx. 0.99
Dropping point DIN ISO 2176		> 160 °C
Consistency		NLGI 00
Worked penetration	[0.1 mm]	400 - 430
Base oil viscosity DIN 51 561, at 40 °C, DIN 51 561, at 100 °C,	 [mm^2/s] [mm^2/s]	 approx. 120 approx. 20
Apparent dynamic viscosity at 25 °C and shear rate = 300 s^{-1},	[mPa s]	approx. 1000
Copper corrosion DIN 51 811 after 24 hrs/100 °C		corrosion rating 0/1-100
FZG test DIN 51 354 Pt 2, A/8, 3/90		load step >12 specific loss in weight < 0.2 mg/KWh

Klübersynth® GE 46-1200
Material Safety Data Sheet

Section I

Manufacturer's name: Klüber Lubrication Corporation

Chemical name and synonyms:	Lubricant grease
Trade name and synonyms:	Klübersynth GE 46-1200
Chemical family:	Polyalkylene glycol oil, Li-soap
Formula:	Proprietary

Section II – Hazardous Ingredients

Paints, preservatives, solvents

	%	TLV (units)
Pigments	–	–
Catalyst	–	–
Vehicle	–	–
Solvents	–	–
Additives	–	–
Others	–	–

Alloys and metallic coatings

	%	TLV (units)
Base metal	–	–
Alloys	–	–
Metallic coatings	–	–
Filler metal plus coating or core flux	–	–
Others	–	–

Hazardous mixtures of other liquids, solids, or gases

– –

Section III – Physical Data of the solvent

Boiling point:	n/a
Vapor pressure (mm Hg):	n/a
Vapor density (air=1):	n/a
Solubility in water:	not soluble
Specific gravity (H_2O=1):	approx. 0.99
Percent, volatile by volume (%):	0
Evaporation rate (……=1):	n/a
Appearance and odor:	brown, neutral odor

Section IV – Fire and Explosion Hazard Data

Flash point (base oil): approx. 240 °C, ASTM D-92

Flammable limits: – – Lel: Uel:

Extinguishing media: water fog, foam, dry chemical, CO_2

Special fire fighting procedures:
Use self-contained breathing apparatus, cool fire exposed areas and equipment.

Unusual fire and explosion hazards:
Do not use direct stream of water, material may float and reignite.

n/a = not applicable

Section V – Health Hazard Data

Threshold limit value: n/a

Effects of overexposure:

Eyes: mild irritation
Skin: Mild irritation, may cause dermititis, oil acne or folliculitis with repeated contact.
Ingestion: No more than slightly toxic if swallowed.
Inhalation: n/a

Emergency and first aid procedures:

Eyes: Flush with large amount of water.
Skin: Remove contaminated clothing, wash skin with soap and water, launder clothing prior to reuse.
Ingestion: Contact doctor for directions. Never give anything by mouth to an unconscious person.

Section VI – Reactivity Data

Stability: stable
Incompatibility (materials to avoid):
Strong oxidizing materials, such as pure oxygen
Hazardous decomposition products: n/a
Hazardous polymerization: will not occur

Section VII – Spill or Leak Procedures

Steps to be taken in case material is released or spilled:
Eliminate all sources of ignition. Collect lubricating grease. Keep product out of waterways.

Waste disposal method:
Incinerate material or dispose of in accordance with your local, state and federal regulations.

Section VIII – Special Protection Information

Respiratory protection (specify type):	n/a
Ventilation:	n/a
Local exhaust:	recommended
Special:	– –
Mechanical (general):	– –
Other:	– –
Protective gloves:	n/a
Eye protection:	n/a
Other protective equipment:	no

Section IX – Special Precautions

Precautions to be taken in handling and storing:
Minimize skin contact with all lubricants. Wash with soap and water prior to eating, drinking, smoking or using sanitary facilities.

Other precautions:
All chemical products should be handled as to prevent constant or repeated contact.

Freudenberg Klüber Lubrication, a member of the Freudenberg Group

Klüber Lubrication München KG
Postfach 107047, D-81310 München
Tel. (089) 7876-0, Telex 5 23 131, Telefax (089) 7876333