

MATERIAL SAFETY DATA SHEET

Klüber Lubrication North America L.P.
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KLÜBER
LUBRICATION

1. PRODUCT INFORMATION AND USE:

24 Hour Emergency Phone:
CHEMTREC 1-800-424-9300

Product Name: **PETAMO GHY 441** (Article Nr. 094051)
Product Use: Lubricating grease

2. HAZARDOUS INGREDIENTS:

not applicable

WT PCT: EXPOSURE LIMITS:
(APPROX.) TLV - PPM

3. OTHER INGREDIENTS:

Ester oil
Organic synthetic thickener

not applicable
not applicable

4. PHYSICAL DATA:

Boiling point (°C): n/ap
Vapor Pressure (mm Hg.): n/ap
Vapor density (air = 1): n/ap
Solubility in water: insoluble
Specific gravity (H₂O = 1): 0.97
Evaporation rate (ether = 1): n/ap
Appearance and odor: light-beige, neutral odor

5. FIRE AND EXPLOSION HAZARD DATA:

Flash Point: Not applicable Method Used: ASTM D 92
Flammable Limits: n/av LFL: UFL:

Extinguishing Media: Foam, carbon dioxide, dry chemical and water fog.

Special Fire Fighting Procedures: Use self-contained breathing apparatus for enclosed or confined spaces or as otherwise needed. Do not use direct stream of water, material may float and reignite.

Unusual Fire and Explosion Hazards: Empty metal containers retain product residue. Do not pressurize, cut, weld, drill, solder or expose container to heat, flame, sparks, or other sources of ignition: it may explode, causing serious injury or death.

6. TOXICOLOGICAL PROPERTIES:

Eye Contact: May cause mild irritation on direct contact.

Skin Contact: Prolonged or repeated contact may cause the removal of skin oils, possibly leading to irritation or dermatitis.

Inhalation: Not expected to be a problem under normal conditions of use.

Ingestion: No acute or chronic effects expected. If swallowed, may cause irritation of the digestive tract.

7. EMERGENCY AND FIRST AID PROCEDURES:

Eyes: Flush with large amounts of water. Seek medical attention if irritation or redness persists.

Skin: Wash exposed areas with soap and water. Remove contaminated clothing. Seek medical attention if irritation or infection occurs.

Inhalation: Not applicable.

Ingestion: If large amounts are swallowed, do not induce vomiting. Get medical attention.

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8. REACTIVITY DATA:

Stability (thermal, light, etc): Stable

Conditions to Avoid: Direct contact with open flames

Incompatibility (materials to avoid): Strong oxidizers, such as pure oxygen.

Hazardous Decomposition/Incomplete Combustion Products: Fumes, smoke, carbon monoxide and carbon dioxide

Hazardous Polymerization: Will not occur.

9. PREVENTIVE MEASURES:

Steps to be Taken in Case Material is Released or Spilled: Scoop up material and add absorbent if necessary.

Collect product and absorbent, place in a chemical waste container. Keep product out of waterways.

Eye Protection: Safety goggles recommended.

Skin Protection: Protective gloves recommended.

Respiratory Protection: Not necessary.

Ventilation: Under normal conditions of use, no special ventilation is required.

Handling and Storing: Avoid prolonged or repeated contact with skin. Wash hands with soap and water prior to eating, drinking and smoking.

10. ENVIRONMENTAL AND REGULATORY CONTROLS:

Waste Disposal Method: Recovered lubricant must be disposed of or reclaimed in compliance with all federal, state and local regulations. Under RCRA, it is the responsibility of the user of products to determine, at the time of disposal, whether the product meets any of the criteria for a hazardous waste. Conditions of use may render the spent product as hazardous, under the criteria for characteristics of hazardous waste under EPA CFR 40, 261.20.

Not hazardous by D.O.T. regulations.

11. PREPARATION INFORMATION:

Prepared by: Klüber Lubrication North America L.P.

Updated: August 1995

PETAMO GHY 441

High Temperature/High Load Carrying Grease

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Major Applications:

- Rolling and plain bearings subject to high temperatures and/or high loads
- Pillow block bearings subject to high temperatures on billet furnaces
- Fan drive shaft bearings for drying ovens subject to high temperatures
- Bearings subject to high temperatures and high loads on wide bed rolling mills

Feature:

- Synthetic base oil
- High viscosity
- Low apparent dynamic viscosity
- High penetration value (NLGI 1)

Benefit:

- Ability to operate over a wide temperature range with an upper temperature limit beyond most competitive grease products
- High load carrying capacity, even at high temperatures
- Low bearing drag, easily pumpable in existing lubrication systems
- Suitable for rejuvenation of aged product during scheduled maintenance periods

Method of Application: Manual and automatic lubrication equipment

Container Sizes:

1 kilogram can
25 kilogram pail

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Article #094051

07/21/95

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Technical Data:

<u>Characteristic</u>	<u>Typical Performance</u>	<u>Test Specification</u>
Base Oil	ester	
Thickener	polyurea	
Color	light beige	
Specific Gravity, 20°C	0.97	
Service Temperature Range, (°C)	-30 to 180	
Drop Point, (°C)	> 250	ASTM D 566 (DIN 51801/1)
Worked Penetration at 25°C (0.1 mm)	325	ASTM D 217 (DIN ISO 2137)
NLGI Grade	1	DIN 51818
Apparent Dynamic Viscosity shear rate 300 s ⁻¹ at 25°C, (mPa•s)	4000	Rotary Viscometer Cone/Plate
Speed Factor, (nD _m)	250,000	
Base Oil Viscosity, (mm ² /s) at 40°C at 100°C	440 38	DIN 51561
Water Resistance 3 hours at 90°C, (rating)	0 - 90	
Corrosion Protection 1 week, distilled water, (rating)	0/1	DIN 51802 (EMCOR)
Rolling Bearing Life Testing FAG FE9 test machine 180°C, 6000 rpm Fa=1500 N L ₅₀ (hours)	210	FAG FE9

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