

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 -CH

KLÜBER
LUBRICATION

PAL SYSTEM LUBRICANT

Version	Revision Date:	Date of last issue: 06.07.2020	Print Date:
4.3	10.11.2020	Date of first issue: 04.10.2016	10.11.2020

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : PAL SYSTEM LUBRICANT
Article-No. : 017168

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Grease
Recommended restrictions on use : For professional users only.

1.3 Details of the supplier of the safety data sheet

Company : Klüber Lubrication München
Geisenhausenerstr. 7
81379 München
Deutschland
Tel: +49 (0) 89 7876 0
Fax: +49 (0) 89 7876 333
info@klueber.com
E-mail address of person responsible for the SDS : mcm@klueber.com
Material Compliance Management
National contact : Klüber Lubrication AG (Schweiz)
Thurgauerstrasse 39
8050 Zürich
Tél +41 44 308 69 69 (08.00 - 17.00 h)
Fax +41 44 308 69 44

1.4 Emergency telephone number

Emergency telephone number : Tox Info Suisse (Phone +41 145, 24 h a day)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)
Not a hazardous substance or mixture.

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mineral oil.
Synthetic hydrocarbon oil
barium complex soap

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration limits M-Factor Notes	Concentration (% w/w)
Substances with a workplace exposure limit :				
residual oils (petroleum), hydrotreated	64742-57-0 265-160-8 649-470-00-4 01-2119489287-22- XXXX	Not classified	Note L	>= 30 - < 50
Dec-1-ene, homopolymer, hydrogenated	68037-01-4 500-183-1 01-2119486452-34- XXXX	Not classified		>= 30 - < 50

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.
Keep patient warm and at rest.
If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.

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Wash off with soap and water.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
If eye irritation persists, consult a specialist.

If swallowed : Move the victim to fresh air.
Do not induce vomiting without medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire may cause evolution of:
Carbon oxides
Metal oxides
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment. Exposure to decomposition products may be a hazard to health.

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.
Use the indicated respiratory protection if the occupational

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exposure limit is exceeded and/or in case of product release (dust).

Do not breathe vapours, aerosols.

Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clean up promptly by sweeping or vacuum.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Wash hands and face before breaks and immediately after handling the product.

Hygiene measures : Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep container closed when not in use. Keep in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with the particular national regulations. Keep in properly labelled containers.

7.3 Specific end use(s)

Specific use(s) : Specific instructions for handling, not required.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

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Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
residual oils (petroleum), hydrotreated	64742-57-0	TWA (inhalable fraction)	5 mg/m ³	CH SUVA (2019-05-21)
Further information	Carcinogenic Category 3, National Institute for Occupational Safety and Health, Deutsche Forschungsgemeinschaft			
Dec-1-ene, homopolymer, hydrogenated	68037-01-4	TWA (inhalable dust)	5 mg/m ³	CH SUVA (2019-01-22)
Further information	Harm to the unborn child is not to be expected when the OEL-value is respected			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
residual oils (petroleum), hydrotreated	Workers	Inhalation	Long-term systemic effects	2,7 mg/m ³
	Workers	Inhalation	Acute systemic effects	5,6 mg/m ³
	Workers	Skin contact	Long-term systemic effects	1 mg/kg
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	Workers	Inhalation	Long-term systemic effects	4,11 mg/m ³
	Workers	Skin contact	Long-term systemic effects	1,17 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	Fresh water	0,00002 µg/l
	Marine water	0,000002 µg/l
	Fresh water sediment	0,00467 mg/kg
	Marine sediment	0,000467 mg/kg
	Soil	0,000934 mg/kg

8.2 Exposure controls

Engineering measures

none

Personal protective equipment

Eye protection : Tightly fitting safety goggles

Hand protection

Material : Nitrile rubber
Break through time : > 10 min
Protective index : Class 1

Remarks : For prolonged or repeated contact use protective gloves. The

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break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.

- Respiratory protection : Not required; except in case of aerosol formation.
- Filter type : Filter type P
- Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : paste
- Colour : beige
- Odour : characteristic
- Odour Threshold : No data available
- pH : Not applicable
- Melting point/range : No data available
- Boiling point/boiling range : No data available
- Flash point : Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : Combustible Solids
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : < 0,001 hPa (20 °C)
- Relative vapour density : No data available

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Relative density : 0,950 (20 °C)
Reference substance: Water
The value is calculated

Density : 0,95 g/cm³
(20 °C)

Bulk density : No data available

Solubility(ies)
Water solubility : insoluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : No data available

9.2 Other information

Sublimation point : No data available

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No conditions to be specially mentioned.

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10.5 Incompatible materials

Materials to avoid : No materials to be especially mentioned.

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Remarks: This information is not available.

Acute inhalation toxicity : Remarks: This information is not available.

Acute dermal toxicity : Remarks: This information is not available.

Components:

residual oils (petroleum), hydrotreated:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 402

Dec-1-ene, homopolymer, hydrogenated:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): 5,2 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Remarks : This information is not available.

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Components:

residual oils (petroleum), hydrotreated:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation

Dec-1-ene, homopolymer, hydrogenated:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

Serious eye damage/eye irritation

Product:

Remarks : This information is not available.

Components:

residual oils (petroleum), hydrotreated:

Species : Rabbit
Assessment : No eye irritation
Method : OECD Test Guideline 405
Result : No eye irritation

Dec-1-ene, homopolymer, hydrogenated:

Species : Rabbit
Assessment : No eye irritation
Method : OECD Test Guideline 405
Result : No eye irritation
GLP : yes

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

residual oils (petroleum), hydrotreated:

Species : Guinea pig
Assessment : Does not cause skin sensitisation.
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.

Assessment : Does not cause respiratory sensitisation.

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Result : Does not cause respiratory sensitisation.

Dec-1-ene, homopolymer, hydrogenated:

Test Type : Maximisation Test
Species : Guinea pig
Assessment : Did not cause sensitisation on laboratory animals.
Method : OECD Test Guideline 406
Result : Did not cause sensitisation on laboratory animals.
GLP : yes

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available
Genotoxicity in vivo : Remarks: No data available

Components:

Dec-1-ene, homopolymer, hydrogenated:

Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Product:

Remarks : No data available

Components:

residual oils (petroleum), hydrotreated:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available
Effects on foetal development : Remarks: No data available

Components:

Dec-1-ene, homopolymer, hydrogenated:

Reproductive toxicity - Assessment : No toxicity to reproduction

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Repeated dose toxicity

Product:

Remarks : This information is not available.

Aspiration toxicity

Product:

This information is not available.

Components:

residual oils (petroleum), hydrotreated:

No aspiration toxicity classification

Dec-1-ene, homopolymer, hydrogenated:

No aspiration toxicity classification

Further information

Product:

Remarks : Information given is based on data on the components and the toxicology of similar products.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

Components:

residual oils (petroleum), hydrotreated:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Test Type: static test

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10.000 mg/l
Exposure time: 48 h
Test Type: Immobilization

Dec-1-ene, homopolymer, hydrogenated:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 1.000 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 1.000 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EL50 (Selenastrum capricornutum (green algae)): > 1.000 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: 125 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

Components:

residual oils (petroleum), hydrotreated:

Biodegradability : Result: Not rapidly biodegradable

Dec-1-ene, homopolymer, hydrogenated:

Biodegradability : Result: Not readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

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This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

Components:

Dec-1-ene, homopolymer, hydrogenated:

Partition coefficient: n-octanol/water : log Pow: > 6,5 (20 °C)
pH: 7
Method: OECD Test Guideline 117
GLP: yes

12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Components:

Dec-1-ene, homopolymer, hydrogenated:

Assessment : Non-classified PBT substance. Non-classified vPvB substance.

12.6 Other adverse effects

Product:

Additional ecological information : No information on ecology is available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : Packaging that is not properly emptied must be disposed of as the unused product.
Dispose of waste product or used containers according to local regulations.

The following Waste Codes are only suggestions:

Waste Code : used product, unused product
12 01 12*, spent waxes and fats

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uncleaned packagings
15 01 10, packaging containing residues of or contaminated
by hazardous substances

SECTION 14: Transport information

14.1 UN number

ADN : Not regulated as a dangerous good
ADR : Not regulated as a dangerous good
RID : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

ADN : Not regulated as a dangerous good
ADR : Not regulated as a dangerous good
RID : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN : Not regulated as a dangerous good
ADR : Not regulated as a dangerous good
RID : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.4 Packing group

ADN : Not regulated as a dangerous good
ADR : Not regulated as a dangerous good
RID : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA (Cargo) : Not regulated as a dangerous good
IATA (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

ADN : Not regulated as a dangerous good
ADR : Not regulated as a dangerous good

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RID : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA (Passenger) : Not regulated as a dangerous good
IATA (Cargo) : Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

PIC Ordinance, ChemPICO (814.82) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

Ordinance on Protection against Major Accidents Threshold quantity according to Major Accidents Ordinance (MAO 814.012) : Not applicable

Volatile organic compounds : Law on the incentive tax for volatile organic compounds (VOCV) no VOC duties

15.2 Chemical safety assessment

This information is not available.

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SECTION 16: Other information

Full text of R-Phrases

Note L : The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346 "Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions - Dimethyl sulphoxide extraction refractive index method", Institute of Petroleum, London. This note applies only to certain complex oil-derived substances in Part 3.

Full text of other abbreviations

CH SUVA : Switzerland. Limit values at the work place
CH SUVA / TWA : Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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