

Safety Data Sheet

according to regulation 1907/2006/EC, Article 31

Printing date 09.11.2018

rev nº 1

Revision: 09.11.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Replaced version: -****1.1 Product identifier****Trade name: MACPUARSA ACEITE HIDRAULICO HV 68****Product Safety number: -****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Uses not included in next item are not advised.

Application of the substance / the mixture Lubricant**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Petróleos de Portugal - Petrogal, S.A.
R. Tomás da Fonseca, Torre C, 1600-209 Lisboa, Portugal
Tel.: +351 21 724 25 00

e-mail: reach@galp.com

1.4 Emergency telephone number:

Petrogal:
Tel: (351) 21 724 25 00

Nº Nacional de Emergência: 112

INEM - Instituto Nacional de Emergência Médica
Centro de Informação Antivenenos
Tel: 808 250 143
Fax: (351) 21 330 32 75
112 (European Emergency Number)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

The product is not classified as hazardous to health or environment, according to the CLP regulation.

The product is not classified, according to the CLP regulation.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008** Not applicable.**Hazard pictograms** Not applicable.**Signal word** Not applicable.**Hazard statements** Not applicable.**2.3 Other hazards**

The exposure to high concentrations of mists may cause irritation of respiratory tract and eyes.
High pressure injection under the skin may cause serious damage to subcutaneous tissues.
Repeated and/or prolonged exposure may cause skin dryness.
Heightened danger of slipping when the product is spilled on the floor.
See also sections 11 and 12.

Results of PBT and vPvB assessment**PBT:**

The substance does not meet PBT criteria.
The base oils do not fulfill the PBT criteria.

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The substance does not meet vPvB criteria.
The base oils do not fulfill the vPvB.

SECTION 3: Composition/information on ingredients**3.2 Chemical characterisation: Mixtures****Description:**

Mixture consisting of the following ingredients:

- Base oils.
- Additives.

Base oils in the mixture > 80% (w/w)

Base oils: DMSO extract (IP 364) < 3% (m/m).

(Note L)

Dangerous components or components with european exposure limits assigned: None.

Additional information:

For the wording of the listed risk phrases, if they exist, refer to section 16.

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.

For the wording of the listed hazard phrases, if they exist, refer to section 16.

The percentages given in the table above, if any, correspond to the highest concentration that is possible to incorporate into the mixture (less may be incorporated).

Exposure limits: see Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

After inhalation: Supply fresh air; consult a doctor in case of complaints.

After skin contact:

Remove contaminated clothing and wash before reuse.

Immediately wash with water and soap and rinse thoroughly.

Never use gasoline, kerosene or other solvents for washing of contaminated skin.

If material is injected under the skin, the casualty should be SENT IMMEDIATELY TO A HOSPITAL.

If skin irritation occurs and/or persists, see a doctor.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, see a doctor.

Remove contact lenses, if present and easy to do so.

After swallowing:

Except as a deliberate act, the ingestion of product is unlikely. However, if this happens, do not induce vomiting and CONSULT A DOCTOR IMMEDIATELY.

If swallowed in large quantities, it is recommended to request medical assistance.

Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Exposure routes:

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Trade name: MACPUARSA ACEITE HIDRAULICO HV 68**Inhalation:** Irritation of the respiratory tract due to excess of exposure to mists.**Skin:**

High pressure injection under the skin:

Injuries may not seem serious at first, but within a few hours tissue may become swollen and extremely painful.

In case of repeated or prolonged exposure with the skin:

Dryness and/or cracking.

Eyes: Slight irritation.**Ingestion:** Danger of serious lung damage by aspiration following vomiting.**Hazards** Aspiration of fluid in the lungs can cause chemical pneumonia.**4.3 Indication of any immediate medical attention and special treatment needed**

High pressure injection under the skin may cause serious damage to the underlying tissues even though no symptoms or injury may be apparent.

In case of ingestion, always assume that aspiration has occurred.

DO NOT INDUCE VOMITING

The victim should be sent to the hospital immediately.

Do not wait until symptoms appear.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Foam (trained personnel only)

Water fog (trained personnel only)

Carbon dioxide

Other inert gases (subject to regulations)

Dry chemical powder

Sand or earth

For safety reasons unsuitable extinguishing agents:

Do not use direct water jets on the burning product:

they could cause splattering and spread the fire.

Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2 Special hazards arising from the substance or mixture

Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide.

For related properties, see section 9.

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained respiratory protective device:

In case of a large fire or where there is a risk of oxygen deficiency.

Wear fully protective suit:

In case of a large fire.

Mouth respiratory protective device:

In case of a small fire.

Additional information

Cool endangered receptacles with water fog.

Avoid and control the spill if there is no risk.

People involved in the operation must be kept away from tanks and stay on the windward side.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

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Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Keep ignition sources away - Do not smoke.

Avoid the contact with the skin.

Wear protective gloves.

Avoid the contact with the eyes.

Wear a safety visor or goggles whenever the projection of the product is expected.

Particular danger of slipping on leaked/spilled product.

Wear antiskid boots.

6.2 Environmental precautions:

Avoid and control the spill if there is no risk.

Do not allow to enter sewers, surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

In case of spillages on public ways, warn the Authorities.

In case of spillage in the sea or navigable watercourses, alert Authorities and other ships.

6.3 Methods and material for containment and cleaning up:

Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions.

Small spillages: remove removed with non-combustible absorbent material (sand, earth, etc).

Significant spills: remove by pumping (use antideflagrant equipment).

Spillages at the sea: confine with floating barriers and remove by pumping (using antideflagrant equipment) or using suitable absorbent.

The use of dispersants should be advised by an expert, and, if required, approved by local authorities

Send for recovery or disposal in suitable receptacles, properly labeled.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Avoid the contact with the skin.

Avoid the contact with the eyes.

Ensure good ventilation/exhaustion at the workplace.

Avoid the formation of oil mists.

Avoid formation and inhalation of mists.

Don't eat or drink while handling the product.

Exposure control: see chapter 8.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Do not accumulate materials impregnated with the product on the workplace.

7.2 Requirements to be met by storerooms and receptacles:

For containers, or container linings use materials specifically approved for use with this product.

Containers materials must be resistant to hydrocarbons.

Compatibility should be checked with the manufacturer.

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Information about storage in one common storage facility: Do not store together with oxidizing agents.

Further information about storage conditions:

Keep containers tightly closed and properly labeled.

Keep only in the original container or in a suitable container for this kind of product.

Keep away from ignition sources.

Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See subchapter 1.2.

For more information, please refer to the product Technical Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

There are no exposure limits established for the preparation.

DNELs

Base oil

| | | |
|------------|---|--------------------------------|
| Oral | DNEL (longo prazo/long-term - sistémico/systemic) | 0.74 mg/kg bw/24h (population) |
| Dermal | DNEL (longo prazo/long term - sistémico/systemic) | 1 mg/kg bw/24h (worker) |
| Inhalative | DNEL (longo prazo/long-term - sistémico/systemic) | 2.7 mg/m3/24h (worker) |
| | DNEL (longo prazo/long-term - local) | 1.2 mg/m3 (population) |
| | | 5.6 mg/m3 (worker) |

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Guarantee suitable ventilation at workplaces.

Do not carry product impregnated cleaning clothes in trouser pockets.

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

Keep away from foodstuffs, beverages and feed.

Respiratory protection:

Use suitable respiratory protective device when aerosol or mist is formed.

Consult standard EN 14387 e EN 140

Protection of hands:

Wear protective gloves.

Gloves must comply with the relevant standards (e.g. EN374)

It is recommended to apply a hydrating cream after work.

Gloves must be periodically inspected to detect wearing, perforations or contaminations.

Material of gloves

The glove material has to be impermeable and resistant to the product.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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Trade name: MACPUARSA ACEITE HIDRAULICO HV 68
Eye protection:

Wear a safety visor or goggles whenever the projection of the product is expected.
(see european standard EN166)

Body protection:

Wear protective suit.
Wear antiskid boots.
Consult standard EN 1149

Limitation and supervision of exposure into the environment

Handle and store according to regulations and applicable good practices.
Dispose according to the legislation in force.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information

Data in this section intends to describe the main properties for safety in storage, handling and use of the product. They should not be understood as product specifications.

Appearance:

Form: Liquid
Colour: Yellow
Odour: Hydrocarbons.

pH-value: Not applicable.

Change in condition

Melting point/freezing point: See pour point
Initial boiling point and boiling range: 200 - 800°C
Pour point -27 °C

Flash point: 228 °C

Flammability (solid, gas): Not applicable.

Decomposition temperature: see Section 10.

Auto-ignition temperature: In accordance with column 2 of REACH Annex VII, this study does not need to be conducted because the product is not flammable in air.

Explosive properties: The product does not present an explosion hazard.

Explosion limits:

Lower: Not determined.
The product is not flammable.
Upper: Not determined.
The product is not flammable.

Vapour pressure: < 0,5 kPa at 20°C (estimated values)
Data reported in the Chemical Safety Report for the category: Other Lubricating Base Oils category.

Density:

Density at 15°C 0.881 g/cm3
Vapour density Not determined.
The volatility is negligible.
Evaporation rate Not determined.
The volatility is negligible.

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Trade name: MACPUARSA ACEITE HIDRAULICO HV 68
Solubility in / Miscibility with water:

Practically immiscible.
Not determined.

Partition coefficient: n-octanol/water: Not determined.

Viscosity:
Dynamic:

Not applicable.

Kinematic viscosity at 40°C

68 mm²/s

Kinematic viscosity at 100°C

10.87 mm²/s

Viscosity index

149

Oxidising properties

Based on the chemical structure of the base oils and on the information available for the other components, it is unlikely that the mixture reacts exothermically with combustible materials.

9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not present reactivity hazards if used under normal conditions of use. Under these conditions, no reactivity hazards other than those mentioned in the rest of this section are known.

10.2 Chemical stability Stable under normal conditions of use.

Thermal decomposition / conditions to be avoided: No decomposition when used according to specifications.

10.3 Possibility of hazardous reactions Dangerous reactions with strong oxidizing agents.

10.4 Conditions to avoid Protect from ignition sources.

10.5 Incompatible materials: Strong oxidizing agents.

10.6 Hazardous decomposition products:

Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification:
Base oil

| | | |
|------------|---------|--------------------------------------|
| Oral | LD50 | > 5,000 mg/kg bw (rat) (OECD 401) |
| Dermal | LD50 | > 2,000 mg/kg bw (rabbit) (OECD 402) |
| Inhalative | LC50/4h | > 5.53 mg/l (rat) (OECD 403) |

Skin corrosion/irritation

The contact with injuries may lead to their worsening.

Data for base oils - Data for skin irritation were derived from studies that were performed during 24 hours rather than 4 hours recommended by the current OECD guidelines. Consequently, the result from a shorter exposure time will likely not cause classification of the category. Based on the data available, base oils do not meet the skin irritation criteria under the current EU classification.

Not classified as irritant.

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Serious eye damage/irritation

Data for base oils - Studies conducted in rabbits indicate that the other lubricant base oils tested were non-irritating to the eyes. Based on the data available, base oils do not meet the skin irritation criteria under the current EU classification.

Not classified as irritant.

Sensitisation

Dermal sensitisation:

Data for base oils - Tests in guinea pig (OECD 406) showed no evidence of skin sensitization.

Data for base oils (IP 346<3%(w/w)) - Dermal sensitization studies in human volunteers are available showed no evidence of skin sensitisation.

Respiratory sensitisation:

Data for base oils - No relevant information available.

Germ cell mutagenicity

Data for base oils (IP 346<3%(w/w)) - The mutagenic potential of these substances has been extensively studied in a range of in vivo and in vitro assays. Based on the data available, base oils do not meet the skin irritation criteria under the current EU classification.

Carcinogenicity

Data for base oils (IP 346<3%(w/w)) - The carcinogenic potential of these substances has been investigated in animals following dermal exposure. Based on the data available, base oils do not meet the skin irritation criteria under the current EU classification.

Reproductive toxicity

Data for base oils (IP 346<3%(w/w)) - Results of developmental and reproductive toxicity studies on these substances show no evidence of developmental or reproductive toxicity in rats.

STOT-single exposure Data for base oils - Acute exposure studies show no evidence of systemic toxicity.

STOT-repeated exposure

Data for base oils (IP 346<3%(w/w)) - Repeated dose inhalation and dermal studies showed no systemic effects.

Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: It is not classified as dangerous for the aquatic environment.

Acute toxicity - short term

Base oil

| | |
|----------|---|
| LL50/96h | > 100 mg/l (pimephales promelas) (OECD 203) |
| EL50/24h | > 10,000 mg/l (daphnia magna) (OECD Guideline 202 (equivalent)) |
| NOEL/72h | ≥ 100 mg/l (pseudokirchnerella subcapitata) (OECD 201) |

Chronic toxicity - long term

Base oil

| | |
|----------|---|
| NOEL/21d | 10 mg/l (daphnia magna) (OECD Guideline 211 (equivalent)) |
|----------|---|

12.2 Persistence and degradability

Data for base oils - Key constituents are not expected to meet the criteria for ready degradability, but are inherently biodegradable.

Data for base oils - Low potential to hydrolyse in the aquatic environment. This degradative process will not contribute to the removal from the environment.

Not easily biodegradable.

Some components meet the persistence criteria.

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Data for base oils - Low potential to undergo photolysis in water and soil. This fate process will not contribute to a measurable degradative loss of this substance from the environment.

The base oils do not fulfill the Persistent or very Persistent criteria.

12.3 Bioaccumulative potential

Bioconcentration factor is not known.

Some components meet the bioaccumulation criteria.

The base oils do not meet the criteria for bioaccumulation or bioaccumulation.

12.4 Mobility in soil

Data for base oils - In soil the product will show low mobility with adsorption being the predominant process.

General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow the product to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment

PBT: The base oils do not fulfill the PBT criteria.

vPvB: The base oils do not fulfill the vPvB.

12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

Used oils may contain contaminants dangerous to health and the environment.

Unused product is not considered as a hazardous waste.

Product:

The generation of waste should be avoided or minimised wherever possible.

Waste product residues should not be disposed of via the foul sewer.

Delivery of waste oil to officially authorized collectors only.

Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation.

European waste catalogue

Used product:

13 01 10 - mineral based non-chlorinated hydraulic oils

These codes can be given only as a suggestion, according to the original composition of the product, and its intended (foreseeable) use(s).

The final user has the responsibility for the attribution of the most suitable code, according to the actual use(s) of the material, contaminations or alterations.

Uncleaned packaging:

Packaging containing residues of or contaminated by dangerous substances: code for the waste 15 01 10*

Contaminated packages must be disposed according to legislation in force in authorised plants.

Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation.

Recycle if possible.

SECTION 14: Transport information**14.1 UN-Number**

ADR, ADN, IMDG, IATA

Not applicable.

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14.2 UN proper shipping name

ADR, ADN, IMDG, IATA

Not applicable.

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class

Not applicable.

14.4 Packing group

ADR, ADN, IMDG, IATA

Not applicable.

14.5 Environmental hazards:

Marine pollutant:

No

14.6 Special precautions for user

Not applicable.

14.7 Transport in bulk according to Annex II of

Marpol and the IBC Code

Not applicable.

Transport/Additional information:

ADR

Remarks:

Not regulated for transport.

IMDG

Remarks:

Not regulated for transport.

IATA

Remarks:

Not regulated for transport.

UN "Model Regulation":

Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Directive 2012/18/EU
Named dangerous substances - ANNEX I None of the ingredients is listed.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has been carried out for the mineral base oil.

A Chemical Safety Assessment for the mixture has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This document contains relevant information to guarantee safety in storage, handling and use of this product.

It must be made available and explained to the workers involved and to safety supervisors.

Department issuing SDS:

Galp Energia - Petróleos de Portugal, Petrogal, S.A. - R&D - DPT - DTR - Qualidade e Segurança de Produtos

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Trade name: MACPUARSA ACEITE HIDRAULICO HV 68**Legend:**

n.a.: not available

n.d.: not determined

ca.: approximately

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

SCL: Specific Concentration Limits

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Sources:

REACH - Chemical Safety Report prepared for the group of substances Other Lubricant Base Oils.

Information from raw materials suppliers.

Technical literature.