Neutral Heavy 500 (PNP 95)
Safety Data Sheet
according to Regulation (EC) No. 453/2010
Revision date: 04/07/2011
Supersedes: 02/12/2010
Version: 1.0

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

1.1. Product identifier

- Chemical type: Substance
- Substance name: Lubricating oils
- Trade name: Neutral Heavy 500 (PNP 95)
- EC index no: 649-484-00-0
- EC no: 278-012-2
- CAS No.: 74869-22-0
- REACH registration No.: 01-2119495601-36-0008
- Product code: 903, SDS # PbR0057
- Synonyms: Extensor Neutral Heavy 500 (952) / Solvent Neutral 500

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

1.2.1. Relevant identified uses

- Use of the substance/preparation: Manufacture of substances
  - Intermediate
  - Formulation [mixing] of preparations and/or re-packaging
  - Coatings
  - Cleaning agent
  - Use in Oil and Gas field drilling and production operations
  - Metal working fluids
  - Release agent.
  - Agrochemicals
  - Building and construction work.
  - Road work
  - Manufacture of rubber products.
  - Polymer preparations and compounds
  - Fuels
  - Lubricant
  - Use as laboratory reagent.
  - mining (including offshore industries).
  - Water treatment chemicals.
  - Functional fluids
  - Binding agent
  - Explosive

1.2.2. Uses advised against

- No additional information available

1.3. Details of the supplier of the safety data sheet

- PETROBRAS GLOBAL TRADING BV
- Weena 722, 4th Floor
- 3014, Rotterdam
- The Netherlands

All communications shall be addressed exclusively to the following address:
- Petrobras Europe Ltd
- 4th Floor, 20 North Audley Street
- London W1K 6WL – United Kingdom
- Fax number: +44(0) 20 7355 8750
- E-mail: reach@petrobras.com.br

1.4. Emergency telephone number

- Emergency number: For Chemical Emergency, Spill, Leak, Fire, Exposure or Accident Call CHEMTREC Day or Night
  - Within USA and Canada: 1-800-424-9300
  - Outside USA and Canada (collect calls accepted): 1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

- Classification according to Regulation (EC) No. 1272/2008 [CLP]
  - Not classified
- Classification according to Directive 67/548/EEC or 1999/45/EC
  - Not classified

- Adverse physicochemical, human health and environmental effects
  - No data available.
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2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards
This substance/mixture does not meet the PBT/vPvB criteria of REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Directive 67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricating oils (contains less than 3% DMSO-extract)</td>
<td>(CAS No.) 74869-22-0 (EC no) 278-012-2 (EC index no) 649-484-00-0</td>
<td>100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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<th>Product identifier</th>
<th>%</th>
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<td>100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of R-, H- and EUH-phrases: see section 16.

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of breathing difficulties administer oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. If medical advice is needed, have product container or label at hand.

First-aid measures after skin contact: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Rinse thoroughly with plenty of water for at least 20 minutes and take medical advice. If medical advice is needed, have product container or label at hand.

First-aid measures after eye contact: Rinse immediately and plentifully with water, also under the eyelids, for at least 20 minutes. Seek immediate medical advice. If medical advice is needed, have product container or label at hand.

First-aid measures after ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container label. If swallowed, rinse mouth with water (only if the person is conscious). Drink plenty of water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation: Slightly irritating to respiratory system.

Symptoms/injuries after skin contact: Slightly irritating to skin. Prolonged/repetitive skin contact may cause skin defattening or dermatitis.

Symptoms/injuries after eye contact: Slightly irritating to eyes.

Symptoms/injuries after ingestion: Nausea.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Unsuitable extinguishing media: Water spray. Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

5.3. Advice for firefighters
Firefighting instructions: Cool tanks/drums with water spray/remove them into safety.

Protective equipment for firefighters: In case of fire: Wear self-contained breathing apparatus. Refer to section 8.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Use water spray/stream to protect personnel and to cool endangered containers. Emergency cooling must be provided for in case of fire. Remove product from area of fire.

6.1.1. For non-emergency personnel
Protective equipment: Wear suitable protective clothing, gloves and eye/face protection. Refer to section 8.
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6.1.2. For emergency responders

6.2. Environmental precautions
Stop leak if safe to do so. Avoid release to the environment. Contaminated fire-fighting water must be collected separately. Prevent spreading over great surfaces (e.g. by damming or installing oil booms). Do not discharge into drains or the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Collect in closed containers for disposal. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Ensure all waste water is collected and treated via a waste water treatment plant. Consult the local waste disposal expert about waste disposal. Do not empty into drains or the aquatic environment. Dispose of this material and its container to hazardous or special waste collection point.

Other information: Relevant water authorities should be notified of any large spillage to water course or drain. Do not allow to enter into soil/subsoil. Eliminate all ignition sources if safe to do so. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

6.4. Reference to other sections
Refer to sections 8 and 13.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Handle in accordance with good industrial hygiene and safety procedures. Use only in well-ventilated areas. Use personal protective equipment as required. Use only non-sparking tools. Ensure the grounding of containers, apparatus, pumps and suction equipment.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Floors should be impenetrable, resistant to liquids and easy to clean. The floor should be leak tight, jointless and not absorbent.
Incompatible materials: Oxidizing agents, strong.
Storage area: Keep away from open flames, hot surfaces and sources of ignition. Ensure the grounding of containers, apparatus, pumps and suction equipment.
Special rules on packaging: Portable Tanks/vessels.

7.3. Specific end use(s)
No data available.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
Neutral Heavy 500 (PNP 95) (74869-22-0)
Belgium Limit value (mg/m³) 5 mg/m³
Belgium Short time value (mg/m³) 10 mg/m³
Italy - Portugal - USA ACGIH ACGIH TWA (mg/m³) 5 mg/m³
Italy - Portugal - USA ACGIH ACGIH STEL (mg/m³) 10 mg/m³
Neutral Heavy 500 (PNP 95) (74869-22-0)
DNEL/DMEL (Workers)
Long-term - systemic effects, dermal 1 mg/kg bodyweight/day
Long-term - systemic effects, inhalation 2.7 mg/m³/day
DNEL/DMEL (General Population)
Long-term - systemic effects, oral 0.74 mg/kg bodyweight/day
Long-term - systemic effects, inhalation 1.2 mg/m³/day

8.2. Exposure controls
Appropriate engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate ventilation.

Personal protective equipment: Wear protective gloves/protective clothing/eye protection/face protection. The entire protective clothing must be washed after use. Used working clothes should not be used outside the work area. Do not eat, drink or smoke when using this product.

Hand protection: Wear protective gloves. PVC (Polyvinyl chloride).
Eye protection: Wear eye protection/face protection.
Skin and body protection: Wear suitable protective clothing or Rubber apron.
Respiratory protection: Wear respiratory protection. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used! In case of fire: Wear self-contained breathing apparatus.
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>clear.</td>
</tr>
<tr>
<td>Colour</td>
<td>Light yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Solidification point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>440-550 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 230 °C ASTM D 92</td>
</tr>
<tr>
<td>Relat. evap. rate comp. to butylacetate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 5 mmHg @ 25°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.88 g/cm³ @ 20°C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: not significant</td>
</tr>
<tr>
<td>Log Pow</td>
<td>3.9-6</td>
</tr>
<tr>
<td>Self ignition temperature</td>
<td>355 °C (Combustion point/Fire point: &gt;280°C)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 400 °C</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>94-101.8 cSt @ 40°C</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity


10.2. Chemical stability

Stable at normal conditions. When exposed to heat, may decompose liberating hazardous gases.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

No data available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>[Neutral Heavy 500 (PNP 95) (74869-22-0)]</td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 6000 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 5 mg/l/4h</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
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Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified

Neutral Heavy 500 (PNP 95) (74869-22-0)

<table>
<thead>
<tr>
<th>NOAEL (oral, rat, 90 days)</th>
<th>&lt; 125 mg/kg bodyweight/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL (dermal, rat/rabbit, 90 days)</td>
<td>&gt; 2000 mg/kg bodyweight/day</td>
</tr>
</tbody>
</table>

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Ames test negative. Prolonged or repeated contacts with the skin may cause dermatitis.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : Do not allow agent or/and its container to leak into waters. (Do not clean release apparatus in the direct vicinity of surface waters/Avoid indirect entry into farmyard gullies or road gullies).
Ecology - water : In case of large spills the product may be hazardous to aquatic organisms due to possible formation of a film on the surface water which can diminish dissolved oxygen levels.

<table>
<thead>
<tr>
<th>Neutral Heavy 500 (PNP 95) (74869-22-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fishes</td>
</tr>
<tr>
<td>LC50 other aquatic organisms</td>
</tr>
<tr>
<td>EC50 Daphnia</td>
</tr>
<tr>
<td>EC50 Daphnia</td>
</tr>
<tr>
<td>NOEC (acute)</td>
</tr>
<tr>
<td>NOEC (chronic)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Neutral Heavy 500 (PNP 95) (74869-22-0)

Persistence and degradability : Inherently biodegradable.

12.3. Bioaccumulative potential

Neutral Heavy 500 (PNP 95) (74869-22-0)

| BCF fishes | 132 estimated |
| Log Pow | 3.9-6 |
| Bioaccumulative potential | Bioaccumulative potential |

12.4. Mobility in soil

Neutral Heavy 500 (PNP 95) (74869-22-0)

Ecology - soil : Low mobility (soil).

12.5. Results of PBT and vPvB assessment

Neutral Heavy 500 (PNP 95) (74869-22-0)

This substance/mixture does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects
Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : Consult the local waste disposal expert about waste disposal. Do not empty into drains or the aquatic environment. Waste is to be kept separate from other types of waste until its disposal. Dispose of this material and its container to hazardous or special waste collection point. Disposal must be done according to official regulations.

SECTION 14: Transport information

Not a dangerous good in sense of transport regulations.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
No ingredients included in the REACH Candidate list


15.1.2. National regulations
Regional legislation : No data has been reported. In case of need contact our Product Safety office.
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15.2. Chemical safety assessment
Substance is not classified as dangerous. Exposure scenarios don’t need to be provided.

SECTION 16: Other information
Sources of Key data : PETROBRAS. MSDS.

SDS PETROBRAS USES

The information presented in this Safety Data Sheet is based on current knowledge and is believed to be complete and accurate. It describes the product for the purposes of health, safety and environment requirements only and shall, therefore, be used only as a guide. The data refers to a specific product and may not be valid for combined uses with other products. It is the user’s obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. Petrobras shall not be responsible for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices.