

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

1.1. Product identifier

| | |
|------------------------|--|
| Chemical type | : Substance |
| Substance name | : Distillates (petroleum), hydrotreated heavy naphthenic |
| Trade name | : LUB-NH140 |
| EC index no | : 649-465-00-7 |
| EC no | : 265-155-0 |
| CAS No. | : 64742-52-5 |
| REACH registration No. | : 01-2119467170-45-0009 |
| Product code | : 91N, 95D, SDS # PbR0096 |
| Synonyms | : Extensor NH140 / Naphthenic Base Oil NH-140 |

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 International Braspetro B.V. – PIB BV
Prins Bernhardplein 200, 1097 – JB Amsterdam
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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according to Regulation (EC) No. 453/2010

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.

other hazards which do not result in classification : When exposed to heat, may decompose liberating hazardous gases.

SECTION 3: Composition/information on ingredients

3.1. Substances

| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|---|---|-----|---|
| Distillates (petroleum), hydrotreated heavy naphthenic (contains less than 3% DMSO extract) | (CAS No.) 64742-52-5 (EC no) 265-155-0 (EC index no) 649-465-00-7 | 100 | Not classified |
| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
| Distillates (petroleum), hydrotreated heavy naphthenic (contains less than 3% DMSO extract) | (CAS No.) 64742-52-5 (EC no) 265-155-0 (EC index no) 649-465-00-7 | 100 | Not classified |

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 defatting 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

- Suitable extinguishing media: : carbon dioxide (CO₂), dry chemical powder, foam. Water fog.
- 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

- Reactivity : On combustion, forms. Carbon dioxide (CO₂). Sulphur dioxide (SO₂). Nitrogen oxides (NO_x). Carbon monoxide.

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.

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6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection. Refer to section 8.
Emergency procedures : Stop leak if safe to do so. Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection. In case of fire: Wear self-contained breathing apparatus. Refer to section 8.
Emergency procedures : Evacuate unnecessary personnel. Eliminate leaks immediately. Stop leak if safe to do so. Remove all sources of ignition.

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

- For containment : Clean up any spills as soon as possible, using an absorbent material to collect it.
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). Do not use water for cleaning. Ensure all waste water is collected and treated via a waste water treatment plant.
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.

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

| LUB-NH140 (64742-52-5) | | |
|------------------------------|--|-----------------------|
| Belgium | Limit value (mg/m ³) | 5 mg/m ³ |
| Belgium | Short time value (mg/m ³) | 10 mg/m ³ |
| Italy - Portugal - USA ACGIH | ACGIH TWA (mg/m ³) | 5 mg/m ³ |
| Italy - Portugal - USA ACGIH | ACGIH STEL (mg/m ³) | 10 mg/m ³ |
| Spain | VLA-ED (mg/m ³) | 5 mg/m ³ |
| Spain | VLA-EC (mg/m ³) | 10 mg/m ³ |
| The Netherlands | MAC TGG 8H (mg/m ³) | 5 mg/m ³ |
| Denmark | Grænseværdie (langvarig) (mg/m ³) | 1 mg/m ³ |
| Finland | HTP-arvo (8h) (mg/m ³) | 5 mg/m ³ |
| Ireland | OEL (8 hours ref) (mg/m ³) | 0.2 mg/m ³ |
| Norway | Gjennomsnittsverdier (AN) (mg/m ³) | 1 mg/m ³ |
| Sweden | nivågränsvärde (NVG) (mg/m ³) | 1 mg/m ³ |
| Sweden | kortidsvärde (KTV) (mg/m ³) | 3 mg/m ³ |

| LUB-NH140 (64742-52-5) | | |
|--|----------------------------|--|
| DNEL/DMEL (Workers) | | |
| Long-term - systemic effects, dermal | 1 mg/kg bodyweight/day | |
| Long-term - systemic effects, inhalation | 2.7 mg/m ³ /day | |
| DNEL/DMEL (General Population) | | |
| Acute - systemic effects, oral | 0.74 mg/kg bodyweight | |
| Long-term - systemic effects, inhalation | 1.2 mg/m ³ /day | |

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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. |
| 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

| | |
|---|---|
| Physical state | : Liquid |
| Appearance | : clear. |
| Colour | : light yellow. |
| Odour | : odourless. |
| Odour threshold | : No data available |
| pH | : No data available |
| Melting point | : No data available |
| Solidification point | : No data available |
| Boiling point | : 225.4-516.6 °C |
| Flash point | : ≥ 210 °C ASTM D 92 |
| Relat. evapor. rate comp. to butylacetate | : No data available |
| Flammability (solid, gas) | : No data available |
| Explosive limits | : No data available |
| Vapour pressure | : < 5 mmHg @ 25°C |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : 0.913-0.923 g/cm ³ @ 20°C |
| Solubility | : Water: not significant |
| Log Pow | : 10.32 estimated |
| Self ignition temperature | : 280 °C (Combustion point/Fire point: >230 °C) |
| Decomposition temperature | : > 400 °C |
| Viscosity, kinematic | : 135-150 cSt @ 40°C |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

On combustion, forms. Carbon dioxide (CO₂). Sulphur dioxide (SO₂). Nitrogen oxides (NO_x). Carbon monoxide.

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

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

No data available.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

| LUB-NH140 (64742-52-5) | |
|----------------------------|--------------|
| LD50 oral rat | > 5000 mg/kg |
| LD50 dermal rat | > 2000 mg/kg |
| LC50 inhalation rat (mg/l) | > 5 mg/l/4h |
| ATE (oral) | 5000 mg/kg |
| ATE (dermal) | 2000 mg/kg |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

| LUB-NH140 (64742-52-5) | |
|-----------------------------------|-----------------------------|
| NOAEL (oral,rat,90 days) | < 125 mg/kg bodyweight/day |
| NOAEL (dermal,rat/rabbit,90 days) | > 2000 mg/kg bodyweight/day |

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Ames test negative. Repeated exposure may cause skin dryness or cracking.

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.

| LUB-NH140 (64742-52-5) | |
|------------------------------|-------------------------------|
| LC50 fishes | > 100 mg/l 96 hours |
| LC50 other aquatic organisms | > 10000 mg/l 96 hours- shrimp |
| EC50 Daphnia | > 10000 mg/l 48 hours |
| EC50 Daphnia | > 1000 mg/l 21 days |
| NOEC (acute) | > 100 mg/l 72 hours- Algae |
| NOEC (chronic) | > 1000 mg/l 21 days- daphnia |

12.2. Persistence and degradability

| LUB-NH140 (64742-52-5) | |
|-------------------------------|---|
| Persistence and degradability | This product is expected to have a low potential to degrade and thus is expected to persist in the environment. |

12.3. Bioaccumulative potential

| LUB-NH140 (64742-52-5) | |
|------------------------|-----------------|
| BCF fishes | 80 estimated |
| Log Pow | 10.32 estimated |

12.4. Mobility in soil

| LUB-NH140 (64742-52-5) | |
|------------------------|----------------------|
| Log Koc | 109 estimated |
| Ecology - soil | Low mobility (soil). |

12.5. Results of PBT and vPvB assessment

| LUB-NH140 (64742-52-5) | |
|--|--|
| This substance/mixture does not meet the PBT/vPvB criteria of REACH, annex XIII. | |

12.6. Other adverse effects

No additional information available

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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

Other regulations, restrictions and prohibition regulations : Compliance with following regulations: Regulation (EC) 1907/2006 as amended. Regulation (EC) 1272/2008 as amended. Directive 1999/45/EC as amended. Directive 67/548/EEC as amended.

15.1.2. National regulations

Regional legislation : No data has been reported. In case of need contact our Product Safety office.

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.

Abbreviations and acronyms : ASTM - American Society for Testing and Materials . CLP - Classification, Labelling and Packaging. CSR - Chemical Safety Report. EC - European Community. EEC - European Economic Community. GHS - Globally Harmonised System. REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals. SDS - Safety Data Sheet.

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.