

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

1.1. Product identifier

| | |
|------------------------|-------------------------|
| Chemical type | : Substance |
| Substance name | : Slack Wax (petroleum) |
| Trade name | : Slack Wax |
| EC index no | : 649-244-00-5 |
| EC no | : 265-165-5 |
| CAS No. | : 64742-61-6 |
| REACH registration No. | : 01-2119489284-28-0030 |
| Product code | : 413, SDS # PbR0111 |
| Synonyms | : Oily Paraffin NM |

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 Release agent. Agrochemicals Building and construction work. Road work Manufacture of rubber products. Polymer preparations and compounds Fuels Lubricant Functional fluids Consumer use Production of resins/rubbers. |
|----------------------------------|---|

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

None known.

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.

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according to Regulation (EC) No. 453/2010

other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|--|---|-----|--|
| Slack wax (petroleum) (contains less than 3% DMSO extract) | (CAS No.) 64742-61-6 (EC no) 265-165-5 (EC index no) 649-244-00-5 | 100 | Not classified |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|---|-----|---|
| Slack wax (petroleum) (contains less than 3% DMSO extract) | (CAS No.) 64742-61-6 (EC no) 265-165-5 (EC index no) 649-244-00-5 | 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 : High concentration of vapours may induce: headache, nausea, dizziness. Irritant effect on the respiratory tract.
- Symptoms/injuries after skin contact : Slightly irritating to skin. Prolonged/repetitive skin contact may cause skin defatting or dermatitis. Heated product causes burns.
- 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

Following contact with the melted product, quickly cool affected skin area with water.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: : Carbon dioxide (CO2). Foam. Water spray.

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

No additional information available

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 : Refer to section 8.

6.1.2. For emergency responders

Protective equipment : Refer to section 8.

6.2. Environmental precautions

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).

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according to Regulation (EC) No. 453/2010

6.3. Methods and material for containment and cleaning up

Other information : Relevant water authorities should be notified of any large spillage to water course or drain.

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. The melted product can cause severe burns.

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.

Storage condition(s) : Only use anti-static equipped (spark-free) tools. Ensure the grounding of containers, apparatus, pumps and suction equipment. Store in a dark area. Keep away from open flames, hot surfaces and sources of ignition. Keep away from: humid air.

Incompatible materials : Strong oxidizing agents.

Storage area : Keep away from open flames, hot surfaces and sources of ignition. Do not store near oxidizing agents. Store in a dark area. Only use anti-static equipped (spark-free) tools. Ensure the grounding of containers, apparatus, pumps and suction equipment. Floors should be impenetrable, resistant to liquids and easy to clean. The floor should be leak tight, jointless and not absorbent. standard pressure (101,3 kPa).

Special rules on packaging : Portable Tanks/vessels.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Slack wax (petroleum) (contains less than 3% DMSO extract) (64742-61-6) | |
|---|----------------------------|
| DNEL/DMEL (Workers) | |
| Long-term - systemic effects, dermal | 5.8 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 |

8.2. Exposure controls

Personal protective equipment : Take off contaminated clothing and wash before reuse. Used working clothes should not be used outside the work area. Do not eat, drink or smoke when using this product. Wear protective gloves and eye/face protection.

Hand protection : Protective gloves made of PVC.

Eye protection : Wear eye protection/face protection.

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 : Solid

Colour : light brown.

Odour : None.

Odour threshold : No data available

pH : No data available

Melting point : 51.2 °C

Solidification point : No data available

Boiling point : 343.8-562.2 °C

Flash point : 248 °C ASTM D92

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

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| | |
|---------------------------|--|
| Relative density | : 0.82 g/cm ³ @ 20°C |
| Solubility | : Soluble in toluene. 14.5g/100g @ 20°C. Water: Insoluble |
| Log Pow | : No data available |
| Self ignition temperature | : 280 °C ASTM D 5372 (Combustion point/Fire point: 274°C) |
| Decomposition temperature | : > 400 °C |
| Viscosity, kinematic | : 5.3 cSt @ 100°C (ASTM D445) |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |

9.2. Other information

VOC content : < 0.01 % (w/w) @ 25°

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.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Slack wax (petroleum) (contains less than 3% DMSO extract) (64742-61-6)

| | |
|--------------------|--------------|
| LD50 oral rat | > 5000 mg/kg |
| LD50 dermal rabbit | > 2000 mg/kg |

| | |
|--|--|
| Skin corrosion/irritation | : Not classified moderate skin irritation |
| Serious eye damage/irritation | : Not classified Not irritating |
| Respiratory or skin sensitisation | : Not classified Not sensitizing |
| 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 |

Slack wax (petroleum) (contains less than 3% DMSO extract) (64742-61-6)

| | |
|--------------------------|----------------------------|
| LOAEL (oral,rat,90 days) | < 125 mg/kg bodyweight/day |
|--------------------------|----------------------------|

| | |
|---|--|
| Aspiration hazard | : Not classified |
| Potential Adverse human health effects and symptoms | : High concentration of vapours may induce: headache, nausea, dizziness. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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| Slack wax (petroleum) (contains less than 3% DMSO extract) (64742-61-6) | |
|--|-------------------------------|
| LC50 fishes | > 100 mg/l 96 hours |
| LC50 other aquatic organisms | > 10000 mg/l 96 hours- shrimp |
| EC50 Daphnia | > 10000 mg/l 48 hours |
| NOEC (acute) | > 100 mg/l 96 hours- fish |
| NOEC (chronic) | > 1000 mg/l 48 hours |

12.2. Persistence and degradability

| Slack Wax (64742-61-6) | |
|-------------------------------|--------------------|
| Persistence and degradability | No data available. |

12.3. Bioaccumulative potential

| Slack Wax (64742-61-6) | |
|-------------------------------|--------------------|
| Bioaccumulative potential | No data available. |

12.4. Mobility in soil

| Slack Wax (64742-61-6) | |
|-------------------------------|--------------------|
| Ecology - soil | No data available. |

12.5. Results of PBT and vPvB assessment

| Slack Wax (64742-61-6) | |
|--|--|
| 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. Dispose of this material and its container to hazardous or special waste collection point. Disposal must be done according to official regulations.

Additional information : When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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

VOC content : < 0.01 % (w/w) @ 25°

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

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

CSA has not been established. The substance is not classified as dangerous.

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.