

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

1.1. Product identifier

Chemical type	: Substance
Substance name	: Petroleum
Trade name	: Petroleum
EC index no	: 649-049-00-5
EC no	: 232-298-5
CAS No.	: 8002-05-9
REACH registration No.	: Not applicable
Product code	: SDS # PbR0113
Synonyms	: Marlim, Marlim Light, Roncador Heavy, Albacora Leste, Ostra, Frade, Jubarte, Roncador 28, Bijupirá, Roncador, Lula

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

1.2.1. Relevant identified uses

Industrial/Professional use spec.	: Fuels Manufacture of substances
Use of the substance/preparation	:

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Only representative:
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

Manufacturer:
Petróleo Brasileiro S. A.
Avenida Chile, 65.
20035-900 Rio de Janeiro - Brazil
E-mail: sac@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
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 1	H224
Eye Irrit. 2	H319
Muta. 2	H341
Carc. 1B	H350
Repr. 2	H361d
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304
Aquatic Chronic 2	H411
Acute Tox. 4 (Inhalation:dust,mist)	H332

Full text of H-phrases: see section 16.

Classification according to Directive 67/548/EEC or 1999/45/EC

F+; R12
Xn; R20
Xi; R36
Carc.Cat.2; R45
Repr.Cat.3; R63
Xn; R48/20/21
R67
Xn; R65
Muta.Cat.3; R68
N; R51/53

Full text of R-phrases: see section 16.

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Adverse physicochemical, human health and environmental effects

Extremely flammable liquid and vapour. Harmful if inhaled. Vapours may cause drowsiness and dizziness. Causes serious eye irritation. May result in aspiration into the lungs, causing chemical pneumonia. May cause damage to organs through prolonged or repeated exposure. Suspected of causing genetic defects. May cause cancer. Possible risk of harm to the unborn child. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

GHS08

GHS09

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H224 - Extremely flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment.

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

: Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May produce skin irritation. Prolonged/repetitive skin contact may cause skin defatting or dermatitis. For this substance a chemical safety assessment has not been carried out.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Petroleum	(CAS No.) 8002-05-9 (EC no) 232-298-5 (EC index no) 649-049-00-5	100	F+; R12 Xn; R20 Xi; R36 Carc.Cat.2; R45 Repr.Cat.3; R63 Xn; R48/20/21 R67 Xn; R65 Muta.Cat.3; R68 N; R51/53
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Petroleum	(CAS No.) 8002-05-9 (EC no) 232-298-5 (EC index no) 649-049-00-5	100	Flam. Liq. 1, H224 Acute Tox. 4 (Inhalation:dust,mist), H332 Eye Irrit. 2, H319 Carc. 1B, H350 Repr. 2, H361d STOT RE 2, H373 STOT SE 3, H336 Asp. Tox. 1, H304 Muta. 2, H341 Aquatic Chronic 2, H411

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

3.2. Mixtures

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air. In case of breathing difficulties administer oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. Seek medical advice (show the label where possible).
- First-aid measures after skin contact : Remove contaminated clothing and shoes. Rinse immediately with plenty of water (for at least 15 minutes). Wash contaminated clothing before reuse. Seek medical advice (show the label where possible).
- First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice (show the label where possible).
- First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Seek medical advice (show the label where possible).

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

- Symptoms/injuries after inhalation : Harmful by inhalation.
- Symptoms/injuries after skin contact : May cause skin irritation. May cause skin dryness or cracking. Repeated or prolonged skin contact may cause dermatitis and defatting.
- Symptoms/injuries after eye contact : Irritating to eyes. Burning sensation. Redness of the eye tissue. Redness of the eye tissue.
- Symptoms/injuries after ingestion : May result in aspiration into the lungs, causing chemical pneumonia. May cause gastric irritation. Nausea. Depression of the central nervous system. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of co-ordination.

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

Avoid any direct contact with the product. Keep victim warm and rested. Never give anything by mouth to an unconscious person. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media: : carbon dioxide (CO₂), dry chemical powder, foam. Water spray.
- Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable liquid and vapour. Will float and can be reignited on water surface. On heating/burning: release of irritant gases/vapours. Combustion generates : carbon oxides (CO and CO₂). hydrocarbons. Nitrogen oxides (NO_x).
- Explosion hazard : In closed containers, pressure build up could result in distortion, blowing and in extreme cases bursting of the container. May form flammable/explosive vapour-air 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.
- Other information : Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. A layer of floating combustible liquid may be present. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear suitable protective clothing gloves, and eye/face protection. Refer to section 8. Self contained breathing apparatus.
- Emergency procedures : Avoid contact with skin and eyes. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye/face protection. Refer to section 8.
- Emergency procedures : Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid contact with skin and eyes. Evacuate unnecessary personnel. do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

6.2. Environmental precautions

Do not discharge into drains or the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Prevent entry to sewers and public waters. Prevent spreading over great surfaces (e.g. by damming or installing oil booms).

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- Methods for cleaning up : Sweep up or vacuum up the product. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Place spent adsorbent in sealed packages and contact specialist waste disposal contractor. Collect in closed containers for disposal.
- Other information : Do not allow run-off from fire fighting to enter drains or water courses.

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 : Provide local exhaust or general room ventilation to minimize vapour concentrations. Avoid contact with skin, eye and clothing. Do not breathe gas, fumes, vapour or spray. Handle in accordance with good industrial hygiene and safety procedures. Keep away from oxidizing agents. Do not smoke.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures: : Use only in well-ventilated areas. Keep away from food, drink and animal feedstuffs. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep away from sources of ignition.
- Storage condition(s) : Protect from sunlight. Keep in original containers. Store in tightly closed, properly ventilated containers away from heat, sparks, open flame. Avoid ignition sources. Avoid high temperatures. Do not store near oxidizing agents.
- Incompatible materials : Strong oxidizing agents.
- Storage area : Floors should be impenetrable, resistant to liquids and easy to clean.

7.3. Specific end use(s)

refer to section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Petroleum (8002-05-9)		
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	350 mg/m ³
USA NIOSH	NIOSH REL (ceiling) (mg/m ³)	1800 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2000 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	500 ppm
The Netherlands	MAC TGG 8H (mg/m ³)	0.00055 mg/m ³
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0.04 mg/m ³

Petroleum (8002-05-9)	
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

8.2. Exposure controls

- Appropriate engineering controls : Provide local exhaust or general room ventilation to minimize vapour concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
- Personal protective equipment : Gas mask. Protective goggles. Gloves. Protective clothing.
- Materials for protective clothing : PVC apron covering the tops of the boots.
- Hand protection : Protective gloves made of PVC.
- Eye protection : Chemical goggles or face shield with safety glasses.
- Respiratory protection : An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits.
- Environmental exposure controls : Prevent spreading over great surfaces (e.g. by damming or installing oil booms).



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Dark.

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Colour	: No data available
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Melting point	: 36-71 °C
Solidification point	: No data available
Boiling point	: 32-400 °C
Flash point	: > -7 °C
Relat. evapor. rate comp. to butylacetate	: No data available
Flammability (solid, gas)	: not applicable
Explosive limits	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.7-0.98 g/cm ³ @ 15°C
Solubility	: Soluble in organic solvents. Water: Insoluble in water
Log Pow	: No data available
Self ignition temperature	: Not applicable.
Decomposition temperature	: No data available
Viscosity, kinematic	
Roncador 28, Bijupirá, Roncador, Lula	: 13.5-18.5 mm ² /s (at 40 °C)
Marlim, Marlim Light, Roncador Heavy, Albacora Leste, Ostra, Frade, Jubarte	: 63.9- 580 mm ² /s (at 40 °C) – (*See section 11 "As piration hazard")
Viscosity, dynamic	: No data available
Explosive properties	: not explosive.
Oxidising properties	: Non oxidizing.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling- and storage conditions.

10.3. Possibility of hazardous reactions

No polymerization .

10.4. Conditions to avoid

Avoid ignition sources. heat sources. High temperature.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

irritating gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

Petroleum (8002-05-9)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	2.18 mg/l/4h

Skin corrosion/irritation : Not classified
Not irritating

Serious eye damage/irritation : Causes serious eye irritation.
Lost Hills Light crude oil induced some conjunctival irritation at 24 hours

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Respiratory or skin sensitisation	: Not classified Not sensitizing
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: May cause cancer.
Reproductive toxicity	: Suspected of damaging the unborn child.
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure. May cause damage to organs (blood, liver, spleen, thymus, skin, lung) through prolonged or repeated exposure by inhalation or through skin.
Aspiration hazard	: May be fatal if swallowed and enters airways. *Based on available reports that ingestion of mineral oil causes the aspiration into the lungs, and as a result pneumonia huileuses or chemical pneumonia in human occurs.
Potential Adverse human health effects and symptoms	: May cause damaging effects to central nervous system, metabolism and gastrointestinal tract. May cause skin irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : 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.

Petroleum (8002-05-9)	
LC50 fishes	1641-4965 mg/l duration not specified
EC50 Daphnia	12.48-160 mg/l duration not specified
NOEC (acute)	> 100 mg/l 96 hours- daphnia
NOEC (chronic)	> 10 mg/l 21 days- daphnia
ErC50 (algae)	6.16-8.38 mg/l 96 hours

12.2. Persistence and degradability

Petroleum (8002-05-9)	
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

Petroleum (8002-05-9)	
Bioaccumulative potential	not bioaccumulative.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Petroleum (8002-05-9)	
This substance/mixture does not meet the PBT/vPvB criteria of REACH, annex XIII.	

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Keep recovered product for subsequent disposal.
Waste disposal recommendations	: Landfill solids, including spent absorbent pads used for spill control, at permitted sites. Dispose of this material and its container to hazardous or special waste collection point.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

UN-No. : 1267

14.2. UN proper shipping name

Proper shipping name : PETROLEUM CRUDE OIL
Transport document description : UN 1267 PETROLEUM CRUDE OIL, 3, I, (D/E)

14.3. Transport hazard class(es)

Class (UN) : 3

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Hazard labels (UN) : 3



14.4. Packing group

Packing group (UN) : I

14.5. Environmental hazards

Marine pollutant :



Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.) : 33

Classification code : F1

Orange plates :



Tunnel restriction code : D/E

Limited quantities (ADR) : LQ03

Excepted quantities (ADR) : E3

14.6.2. Transport by sea

No additional information available

14.6.3. Air transport

No additional information available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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

No additional information available

15.2. Chemical safety assessment

Chemical Safety assessment have not been carried out.

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. PVC (Polyvinyl chloride). REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals. SDS - Safety Data Sheet . Overland transport (ADR).

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (Inhalation:dust,mist) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - chronic hazard Category 2
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1B	Carcinogenicity Category 1B

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Eye Irrit. 2	Serious Eye Damage/Irritation Category 2
Flam. Liq. 1	flammable liquids Category 1
Muta. 2	flammable liquids Category 1 flammable liquids Category 4
Repr. 2	Reproductive toxicity Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H224	Extremely flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H341	Suspected of causing genetic defects
H350	May cause cancer
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects
R12	Extremely flammable.
R20	Harmful by inhalation.
R36	Irritating to eyes.
R45	May cause cancer.
R48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R63	Possible risk of harm to the unborn child.
R65	Harmful: may cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.
R68	Possible risk of irreversible effects.

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.