



SAFETY DATA SHEET
(in compliance with Regulation (EC) No. 1907/2006 and Act No. 67/2010 Coll.)
LIGHT FUEL OIL

Issued on: 20.09.2004

Last review: 03.01.2011

Version: 6

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Identification of the substance/agent

LIGHT FUEL OIL

Distillates (petroleum), main heavy fraction.

Reg. No.: 01-2119486888-11-0012

CAS: 68915-96-8; EC: 272-817-2

1.2 Application of the substance/agent

Fuel.

1.3 Identification of the company/enterprise

SLOVNAFT, a.s. Member of the MOL Group, Vlčie hrdlo 1, 824 12 Bratislava 214, Slovak republic
IČO: 31322832, Ing. Ľ. Heribanová, ☎ ++0421(0)2/4055 2993, ludmila.heribanova@slovnaft.sk

1.4 Emergency telephone number

SLOVNAFT, a.s. Member of the MOL Group, Vlčie hrdlo 1, 824 12 Bratislava 214, Slovak republic

Company dispatching 1: ☎ ++0421(0)2/4055 3344

E-mail: podnikovydispecing1@slovnaft.sk

Company dispatching 2: ☎ ++0421(0)2/4055 2244

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Labour medicine and toxicology clinics. Toxicological Information Centre,

Teaching Hospital of Ladislav Dérer Academician, Limbová 5, 831 01 Bratislava 37, Slovak republic

☎ 0421 (0)2 5477 4166 ; ☎ 0421 (0)2 5477 4605 (+fax);

E-mail: tic@healthnet.sk; website: <http://www.healthnet.sk/tic/>

2. HAZARDS IDENTIFICATION

Distillates (68915-96-8) is not classified as danger substances in compliance with Act of the National Council of the Slovak republic No. 67/2010 Coll. on Chemical Substances and Chemical Agents and the European Directive 67/548/EEC and based on Regulation (EC) No. 1907/2006.

2.1 Classification of the substance or mixture

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

Not classified.

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

Not classified.

2.1.3 Adverse physicochemical, human health and environmental effects

No relevant data available.

2.2 Label elements

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

No labelling applicable.

2.2.2 Labelling according to Directive 67/548/EEC or 1999/45/EC

No labelling applicable.

2.3 Other hazards

No relevant data available.



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3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Name	Product identifier		% (w/w) Concentration (range)	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No. 1272/2008
	CAS No.	EC No.			
Aromatic hydrocarbons			46,8		
Saturated hydrocarbons			43,9		
Polar hydrocarbons			9,3		

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

3.2 Mixtures

Not applicable.

4. FIRST AID MEASURES

4.1 General measures

In case of indisposition or labour injury immediately call a professional health service. Show the signs of danger and R and S sentences from the safety data sheet to a doctor. Have the safety data sheet at disposal. Inform the doctor on provided first aid. Do not evoke vomiting in any case. If the affected person vomits, turn him/her on side (position of the head on its side) in order to prevent suffocating with vomits.

4.2 At inhalation

Symptoms: sense drunkenness, narcosis, cramps. They are accompanied with a stinging pain in the chest, with a headache, indisposition, euphoria and disorientation. Prevent hypothermia; ensure fresh air for the stricken person and seek medical advice. Turn him/her to the position with the head on its side in order to prevent suffocating with vomits in case of vomiting. Immediately seek medical advice.

4.3 At skin intervention

Symptoms: feel of greasiness, or slight skin glow. Wash carefully with soap and large volume of water immediately remove contaminated clothes. If the irritation of skin has occurred (erubescence etc), visit a doctor.

4.4 At eye intervention

Symptoms: eye firing.

Wash out carefully several minutes (10-15) using a large volume of water-seek medical advice.

4.5 At swallowing

Symptoms: indigestion disorder, stomach pain, vomiting. Immediately seek for medical advice. Do not evoke vomiting -a danger of inspiration of vomits and suffocating; if the stricken person is conscious, his/her mouth can be flushed with drinking water.

4.6 Special means necessary for the first aid

Not stated.

5. FIREFIGHTING MEASURES

5.1 Suitable fire-fighting agents

Disruptive water, water fog, light, middle-weight and heavy fire-fighting foam.

5.2 Unsuitable fire-fighting agents

Direct water flow.

5.3 Special danger in case of fire

In case of fire hazardous carbon oxides (CO, CO₂), sulphur oxides (SO₂, SO₃) can occur and heave smoke.

5.4 Special protective means in case of fire

Use an isolating breathing apparatus, if necessary. Protective clothes. Complete protection, if necessary.

5.5 Additional data

Not stated.



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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal protection

Unauthorised personnel should immediately leave the area of accident and hazardous areas. Close and label the place of release and the danger zone (e.g. with a tape) and state there symbols of danger. The brigade members shall use an isolating breathing apparatus. In case the bleeding happens in a closed area, assure intensive ventilation and switch off the power.

6.2 Protection of the Environment

Remove all possible sources of ignition in the zone of danger. If possible, do not extinguish sooner than the leak is repaired-danger of explosion cloud formation! Prevent further leakage into the Environment by fencing of the place of accident using suitable absorption agent (POP fibre, VAPEX etc). In order to prevent spreading into water, use scumboards. If possible, it is recommended to pump out the substance by a suitable pump for pumping flammable liquids of class III. Prevent spreading of vapours in the by water fog spraying, water curtain.

6.3 Cleaning methods

Cover the substance residues by non-combustible absorption material, e.g. dry soil, sand, lime powder, POP fibre, VAPEX, EKOSORB and dispose them in compliance with point 13 and in local regulations.

6.4 Additional data

Not stated.

7. HANDLING AND STORAGE

Keep the principles stated in Regulation of the Ministry of Interior of the Slovak republic No. 96/2004 Coll. if performing handling and storage.

7.1 Handling

Equipment used for handling with oil shall be watertight, fitted with fire-fighting agents for immediate intervention. It is necessary to provide intensive ventilation by natural circulation or by technical equipment in closed rooms. A workplace shall be kept clear and emergency exits shall be unobstructed. It is forbidden to eat, drink and smoke during handling.

7.2 Storage

Keep Regulation of the Ministry of Interior of the Slovak republic No. 94/2004 Coll. stating technical requirements put on fire safety at construction and using of buildings.

It is recommended to use stainless steel, carbon steel and non-ferrous metals containers for storage.

The tanks shall be labelled as follows: Inflammable of the 3rd class of danger.

The storage tanks with flammable liquids have to be fitted with an emergency tank.

7.3 Special application

Not stated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values

Technical norm (TN) of staff exposure to carcinogenic and mutagenic factors to technical norm values according to Decree of the Government of the Slovak republic No. 355/2006 and 300/2007 Coll.:

Chemical name	NPEL medial	NPEL terminal
Mineral oil	unrefined = 5 ppm, 1 mg/m ⁻³ refined = 5 mg/m ⁻³	- -

Technical norm (TSH) of staff exposure to carcinogenic and mutagenic factors to technical norm values according to Decree of the Government of the Slovak republic No. 356/2006 and 301/2007 Coll.:

Chemical name	TWA (8h)	Short-time exposure
PAU -benzo(a)pyrene	0,002 mg/m ⁻³	Carcinog. cat. 2, Mutag. cat. 2, 5x TWA, 15 min., 5x pro shift, lapse 1h.

8.2 Exposure inspections

8.2.1 Exposure inspection on the workplace

Prevent inhalation, contact with eyes or skin. Prevent inhalation of vapours or fog. Assure sufficient cleaning of contaminated clothes after finishing or interruption of works, or replace them with the clean one.



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8.2.1.1 Respiratory system protection

Provide good ventilation.

Filter A2 (brown color), counter to organic vapors and steams organic materials with boiling point up 65°C.

At the concentrations above limiting NPEL employ insulated resuscitator.

8.2.1.2 Protection of hands

Hand protection -gloves from the material resistant (VITON penetration time 480 min and NITRIL penetration time 240 min).

Hand cream application is recommended.

8.2.1.3 Protection of eyes

Protecting shield or protecting shield with a hard hat from matter that don't forms electrostatic brick.

8.2.1.4 Skin protection

Fireproof, antistatic protective clothes, antistatic protective shoes, matter that don't forms electrostatic brick.

8.2.2 Environmental exposure inspections

Not stated.

9. PHYSICAL AND CHEMICAL PROPERTIES ⁴⁾

9.1 General information

Physical status:	liquid
Colour:	yellowish brown till brown
Aroma:	aromatic

9.2 Information related to health, safety and the Environment

Solidification point in winter (°C):	-5
Solidification point in summer (°C):	10
Flash point (°C):	66
Lower explosive limit (vol.%):	0,6
Upper explosive limit (vol.%):	6,5
Class of danger:	III
Ignition point (°C):	200
Distillation start (°C):	180
By 350°C distil over (vol.%):	20
Liquid density at 20°C (kg.m ⁻³):	910
Water solubility at 21°C (g/100 ml):	soluble poorly, emulsion creation
Cinematic viscosity at 40°C (mm ² /s):	3,2-18
Caloric value minimum (MJ/kg):	41 000

9.3 Additional data

Not stated.

10. STABILITY AND REACTIVITY

10.1 Conditions of the substance stability

Normal conditions (20°C, 101 325Pa).

10.2 Conditions to be avoided

Increased temperature, fire sources.

10.3 Materials to be avoided

Oxygen, oxidizer materials, acids and lye.

10.4 Hazardous decomposition products

Carbon oxides (CO, CO₂) and sulphur oxides (SO₂, SO₃).

10.5 Additional information

Not stated.



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Version: 6

11. TOXICOLOGICAL INFORMATION

11.1 Acute toxicity

11.1.1 Acute Oral toxicity:

Test OECD 401 *Acute oral toxicity* –non toxic. ⁸⁾, Rat: oral TD 15g/kg. ³⁾

11.1.2 Inhalation toxicity:

Ad inhalant poisoning comes rare, considering low evaporation. Vapours, aerosols incurred at the spraying they can evocate ignitions respiratory system, nerve static, inhibition heart activities and headache. ³⁾

11.1.3 Dermal toxicity:

Adverse reaction it shall too at contact with the skin, which is absorption and irritating. ³⁾

Test OECD 402 *Acute dermal toxicity*, -non toxic. ⁸⁾

Test OECD 404 *Primary skin irritation*, -irritation effects on the skin (500 mg). ⁸⁾

11.1.4 Eye contact:

Test OECD 405 *Primary eyes irritation*, -min. irritating conjunctival mucous after stock application. (100 mg).⁸⁾

11.2 Later and chronic effects:

11.2.1 Allergy: Not testing.

11.2.2 Carcinogen effects: Not testing.

11.2.3 Mutagen effects: OECD 471 gene mutation detection -not mutagenic ⁸⁾.

Modified OECD 474 chromosomal mutation in vitro -mutagenic ⁸⁾.

Modified OECD 482 DNA defect and repairs detection -not mutagenic ⁸⁾.

11.2.4 Reproduction toxicity: LFO contains PAU benzo(a)pyrene that can cause heredity genetic injury, damaged fertility, damaged foetus.

11.2.5 Narcosis: Vapours they can narcotic affect.

11.3. Additional information

Not stated.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

LFO they create a layer on the water surface preventing oxygen transfer to the water, and thus they can damage a pond weed and fauna.

12.2 Mobility

Not determined for the product.

12.3 Stability and degradability

Maximal biodegradation (74 % -method CEC L-33-A-93). ⁹⁾

12.4 Bioaccumulation potential

May be cumulate on the water micro-organisms or on the oysters. ³⁾

12.5 Other negative effects

Not stated.

13. DISPOSAL CONSIDERATIONS

13.1 Material/agent/waste

Disposed product according to Regulation of the Ministry of the Environment of the Slovak republic No. 284/2001 Coll. as amended specifying the Catalogue of Waste is categorised as follows:

Waste type	Waste name	Waste category
13 07 01	Fuel oil and diesel oil.	N (Hazardous)

Waste codes represent recommendations based on planned used of the product.

On the basis of specific conditions of the user for using and disposal, other waste codes can be assigned

Hazardous characteristics of waste: **H7** (Act No. 409/2007, Appendix 4).

Y - A code of hazardous waste (Regulation No. 284/2001 Coll. -Appendix 3).

Y8 - Waste mineral oils inept to the application as primal designation.

Recommended ways of waste disposal and recycling in compliance with Append. 2, 3 of Act No. 409/2007 Coll:

Recommended way of waste recycling: **R9** Refinement oil or its others reuse.

Recommended way of waste disposal: **D10** Incineration on the land.



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13.2 Polluted packaging material

Disposable packages in compliance with Regulation of the Ministry of the Environment of the Slovak republic No. 284/2001 Coll. as amended, by which the Catalogue of waste is specified, are classified as follows:

Waste type	Waste name	Waste category
15 01 10	Packages containing waste of hazardous materials or contaminated with hazardous materials.	N (Hazardous)

Recommended ways of waste recycling and disposal in compliance with Append. 2, 3 of Act No. 409/2007 Col.:

Recommended way of waste disposal: D10 Incineration on the land.

14. TRANSPORT INFORMATION

General declaration: For transport of materials the ADR/RID provisions about international road and railway transport of hazardous materials are valid.

According to these provisions diesel fuel is categorised as follows:

UN -Code: 1202 (Heating Oil; Light)

Road/railway transport (ADR/RID)

Identification number of material dangerousness: 30

Classification code: F1

Class: 3

Limiting weight LQ: 7

Packing group: III.

Sea transport (IMDG) Not practise.

Class or Div.: -

Air transport (IATA) Not practise.

Class or Div.: -

Additional information:



15. REGULATORY INFORMATION

Classification in compliance with Regulation EC No. 1272/2008 and Act No. 67/2010 Coll. on (Chemical Law).

Restriction in terms of annex XVII, Direction (ES) No. 552/2009 to Direction EP 1907/2006:

Hazards: dangerous substance.

Constraints as annex XVII, points: 3.

Restriction in terms of point 3:

- Shall not be used in:
 - ornamental objects, intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any object intended to be used as such, even with ornamental aspects.
- Without prejudice to paragraph 1, substances and preparations which:
 - present an aspiration hazard and are labelled with R65, and
 - can be used as fuel in decorative lamps, and
 - are placed on the market in packaging of a capacity of 15 litres or less, shall not contain a colouring agent, unless required for fiscal reasons, or perfume or both.
- Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and preparations, the packaging of substances and preparations covered by paragraph 2, where intended for use in lamps, must be marked legibly and indelibly as follows: **“Keep lamps filled with this liquid out of the reach of children”**.

Related Legislation:

Regulation (EC) No 1907/2006 of the EP and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing and European Chemicals Agency. Direction EP and Council (ES) No. 1272/2008 for 16. December 2008 at classification, labeling and packing



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substance and mixture, at change, completion and cancelled regulations No. 67/548/EHS and 1999/45/ES and at change and completion regulation (ES) No. 1907/2006. Directives Commission Directive 2009/2/EC of 15 January 2009 amending, for the purpose of its adaptation to technical progress, for the 31st time, Council Directive No. 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances. Act No. 67/2010 Coll. of the National Council of the Slovak republic on chemical substances and chemical preparations (chemical act). Act of NR SR No. 409/2007 and 223/2001, Coll. on waste and on amendment and change of other acts. Regulation of the Ministry of the Environment of the Slovak republic (MŽP SR) No. 283/2001 Coll. on execution of some provisions of the Act on waste as amended. Regulation of the MŽP SR No. 284/2001 Coll. specifying the Catalogue of Waste as amended. Decree of the Government of the Slovak republic No. 355/2006 and 300/2007 Coll. on occupational protection of health of employees against risks connected with exposure by carcinogenic and mutagenic factors. Regulation of the MH SR No. 67/2002 Coll. by which the list of specific chemical substances and specific chemical preparations, whose putting on the market and using is limited or prohibited, is issued as amended. Regulation of the MH SR No. 471/2006 Coll. amending Regulation of the MH SR No. 67/2002 Coll. by which the list of specific chemical substances and specific chemical preparations, whose putting on the market and using is limited or prohibited, is issued as amended. Regulation of the Ministry of Interior of the SR No. 94/2004 Coll, which takes place technical requirements on the fire protection at building and at use buildings. Regulation of the Ministry of Interior of the SR No. 96/2004 Coll. stating principles of fire safety at handling and storage of combustible liquids, heavy fuel oils and vegetable and animal fats and oils.

16. OTHER INFORMATION

Reviewed chapters:

- 1-16 because of changes of content and graphic layout (revision 1).
- 1-16 of data according to Decree of the Ministry of Economy of the Slovak Republic 2/2005 (revision 2).
- 1.3 -address, 1.4 -tel. number, 8 -Decree of the Government of the SR 355/2006 Coll., 16 -legislation (revis. 3).
- 1-16 content and graphic modification according to Regulations EP and Councils ES nos.1907/2006 (revision 4).
- 1, 3, 15 proper innovation CAS and EINECS numbers (revision 5).
- 1,2,3,15,16-classification under the CLP Regulation EC č.1272/2008 and Law No. 67/2010 Z.z. (revision 6).

Other R-, H- sentences:

Not stated.

Addendums:

Workers working regularly with the product and new workers have to pass a regular training or introductory training about risks, prevention and behaviour in order not to endanger themselves and the others. The scope and frequency of trainings are stated by regional directives about hazardous materials.

Legend:

- EJ -Expeditionary force.
- IDLH -Immediately Dangerous to Life or Health.
- EC₅₀ -Ecotoxicological lethal concentration, which in effect is 50% of the tested population.
- LC₅₀ -Lethal concentration, which in effect is 50% of the tested population.
- LD₅₀ -Lethal dose, which in effect is 50% of the tested population.
- LOAEL -The lowest dose / concentration of a substance that has caused harmful effects.
- NOAEL -The highest dose / concentration of a substance which did not produce harmful effects.

Used Literature:

1. Overview of industrial toxicology Organic substances, author: MD Jozef Marhold, PhD., 1986.
2. Sax's Dangerous properties of industrial materials, Ninth Edition, 1995.
3. CHEM-BANK™ -Databanks of potentially hazardous chemicals (SilverPlatter Information -Croner), March 2003, Vol. Id.: RT27, PP-0018-0064 (RTECS -Registry of Toxic Effects of Chemical Substances; OHMTADS -Oil and Hazardous Materials -Technical Assistance Data System; CHRIS -The Chemical Hazards Response Information System; HSBD -Hazardous Substances Data Bank; IRIS -Integrated Risk Information System; TSCA -Toxic Substance Control Act Inventory; NPG -NIOSH Pocket Guide



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L I G H T F U E L O I L

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Version: 6

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4. Steinleitner, H-D: Tables of combustible and hazardous materials, page 187, Berlin 1980.
5. International Chemical Safety Cards, National Institute for Occupational Safety and Health, 2004.
6. Catalogue danger materials NebLat, Aktual s.r.o., 2003.
7. Simulation program Pro/ II with Provision, Simulation Sciences Inc., 2003.
8. LFO, Protocol No. 09-16/01 a 48-50/01, Slovnaft VÚRUP a.s., 2001.
9. LFO, Bio reducibility, method CEC L-33A-93, Protocol No.16/01, Slovnaft VÚRUP, a.s., 23.03.2001.

Additional notices:

Details mentioned herein relate to the product as it is delivered. Provisions stated herein describe the product with regard to necessary safety measures - they do not guarantee final characteristics of the product - but they are based on our present knowledge. The producer does not assume responsibility for incorrect application of the product in consideration of the above-mentioned safety measures.

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