



MATERIAL SAFETY DATA SHEET

according to the instruction of the Minister of Health of 13 November 2007, (*Dz. U.* (official journal) No. 215 item 1588)

Material Safety Data Sheet update date: 20.12.2008

Previous version preparation date:

1. SUBSTANCE/ PRODUCT AND COMPANY IDENTIFICATION

1.1. Trade name: Hexane fraction

1.2. Application: The solvent used in production of car cosmetics, in plastics industry, electronics, production of glues, to fats extraction in fats production plants; others.

1.3. COMPANY IDENTIFICATION

Company name: **Orlen Oil Sp. z o. o.**
Address: ul. Armii Krajowej 19, 30-150 Kraków
Phone number: + 48 (012) 665 55 00, contact phone number + 48 (013) 438 45 24
Fax number: + 48 (012) 665 55 01, + 48 (013) 438 43 21
E-mail : msds@orlenoil.pl

Emergency phone number: + 48 013 43 845 24 or + 48 013 43 84 177 (in week days: 7 a.m – 3 p.m)

2. HAZARD IDENTIFICATION

According to the regulations in force (see section 15) the product is classified as hazardous for the sake of the physical and chemical hazards as well as the hazards for human health and environment.

Physical and chemical hazards

Highly flammable liquid.

Vapours mixed with air form explosive mixtures. Vapours are heavier than air and they accumulate close to the ground level and in lower parts of rooms. Sources of ignition: open fire, spark, hot surface.

Hazard for human health

The product is harmful to reproduction capacity Category 3, harmful and irritant. Possible risk of impaired fertility. Harmful by inhalation; Danger of serious damage to health by prolonged exposure.

Harmful product. Harmful: may cause lung damage if swallowed.

Irritant product. Irritating to skin.

Vapours may cause drowsiness and dizziness.

Inhalation High vapours concentrations are hardly irritating to mucous membranes of respiratory tract; may cause central nervous system disorders such as headaches and dizziness, incoordination, drowsiness, very high concentrations of vapours may cause loss of consciousness.

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Skin contact	It causes skin drying, cracking and exfoliation, skin irritation.
Eye contact	High concentrations cause irritation of eyes mucous membranes; direct contact with the liquid may cause redness, burning, irritation of eye.
Ingestion	It poses risk of aspiration into lungs, it may cause lungs damage.

Exposure effects – see section 11.

Hazard for environment

The product is hazardous for environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Warning labelling on unit packages is required – see section 15.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient	EC (WE) No	CAS No	Content [% (m/m)]	Classification
Naphtha (petroleum), hydrotreated light; Low-boiling hydrotreated oil fraction	265-151-9	64742-49-0	100	H and P NOTE Repro Cat.3 R62 Xn;48/20, R65,R67 F; R11 Xi; R38 N; R51/53
H and P note have been applied (it contains less than 0,1% of benzene)				

4. FIRST AID MEASURES

General recommendations

Do not induce vomiting and do not administer anything orally to unconscious person. Show this material safety data sheet, label or container to the medical personnel giving assistance.

Inhalation

The conscious injured should be walked out, the unconscious injured should be carried out of contaminated area in the fresh air, ensure calmness and warmth.

Place the conscious injured in semi-sitting position, place the unconscious injured in the recovery position. Control and keep patency of respiratory tract. If problems with breathing occurs administer oxygen, in case of breathlessness start resuscitation with AMBU apparatus.

Immediately ensure medical assistance.

Ingestion

Immediately after ingestion administer to drink 200 ml of liquid paraffin to the conscious person. **Do not induce vomiting. Do not serve milk, fat or alcohol.** In the event of spontaneous vomiting occurrence prevent the naphtha present in vomit to penetrate into the respiratory tract. Immediately ensure medical assistance.

Skin contact

Remove contaminated clothing, thoroughly wash the contaminated skin with water with soap and then rinse away with water. In case irritation symptoms develop contact a physician.

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Note: Remove contaminated/ soaked clothing and keep it away from heat and ignition sources.

Eyes contact

Rinse contaminated eyes with running water stream for about 15 minutes holding eyelids wide open. In case irritation symptoms persist contact an oculist.

Instructions for a physician:

Symptomatic treatment.

5. FIRE FIGHTING MEASURES

General recommendations

Notify the environment about the fire, evacuate all people not involved in the emergency action from the hazardous area; if necessary give orders for evacuation; call rescue services, the Fire Fighters Brigade and the Police.

Extinguishing media:

Suitable: carbon dioxide, extinguishing powders, foams, sprayed water streams.

Unsuitable: condensed streams of water

Fire fighting

Small fires extinguishing with dry-powder extinguisher or carbon-dioxide extinguisher; **large fires** extinguishing with foam or dispersed streams of water; use remotely controlled sprinkler head equipment or fire fight from behind the protective barriers– the risk of explosion.

The tanks exposed on fire or high temperature should be cooled with water from the safe distance – the risk of explosion. If it is possible and safe remove the tanks from the dangerous area.

Prevent the fire fighting sewage release to drains and waters.

Special hazards posed by product, combustion products, generated gases

Highly flammable product. Vapours form explosive mixtures with air.

Sealed packages/containers exposed on fire or high temperature may explode in the consequence of inside pressure increase.

In the fire area carbon oxides are generated. Avoid inhalation of combustion products, they may pose danger to human health.

Protection measures for people involved in the fire fighting action

People involved in fire fighting action should be trained, equipped with protective clothing and individual self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

General recommendations

Notify the environment about the emergency situation; evacuate all people not involved in the emergency action from the hazardous area, give orders for evacuation if necessary; call rescue services, the Fire Fighters Brigade and the Police.

NOTE: The area in danger of explosion. The vapours may spread close to the floor/ ground over long distances to sources of ignition and may pose danger caused by flashback.

Personal (individual) protection measures:

Remove sources of ignition – extinguish open fire, announce smoking and using of sparking devices ban, protect the packages against being heated – the risk of explosion.

The vapours should be dispersed with sprayed streams of water.

Avoid direct contact with the released product. Avoid vapours inhalation. .

Use protective clothing and equipment (see section 8).

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Environmental protection (precautions)

Prevent the product release to sink basins, waters or soil. In the event of large spill notify the adequate authorities.

Methods for cleaning up/ disposal

If it is possible and safe remove or reduce the spill (seal, close the liquid inflow), place the damaged package in the emergency package.

Reduce the spill spreading by the area embankment; collected large amounts of the liquid should be pumped out.

Small amounts of the spilled liquid should be banked with non-flammable adsorbent (soil, sand, vermiculite) and collected into the sealed waste container.

Dispose according to the regulations in force (see section 13 and section 15).

7. HANDLING AND STORAGE

Follow general work safety and industrial hygiene rules during the product handling and storage.

Handling procedures

Poisoning prevention: avoid contact with the liquid; avoid eyes contamination; avoid inhalation of vapours and sprays; prevent generation of noxious vapours concentrations in the air; work in well ventilated rooms. Follow rules of personal hygiene during handling and use protective clothing according to information placed in section 8.

Fire and explosion prevention: prevent generation of flammable/ explosive vapours concentrations in the air; eliminate the sources of ignition – do not use open fire, do not smoke, do not use sparking devices and the clothing made of fabric receptive to electrification; protect the tanks against being heated, install explosion protected electrical apparatus, apply bridge grounding and grounding.

Storage

Store only in certified, properly labelled and sealed containers, in the storeroom for flammable liquids, equipped with ventilation installation and explosion protected electrical installation. Protect the containers against being heated. Do not smoke, do not use open fire and sparking devices in the area of storehouse. .

The hexane fraction can be stored in storage tanks according to the regulations in force.

NOTE: Empty, contaminated packages/ containers may contain product residues (liquid, vapours) and may pose fire/ explosion danger. Exercise caution. Cutting, drilling, grinding , welding of contaminated packages/ containers or taking these activities nearby is prohibited.

Specific applications: No data. In order to obtain additional data please contact the supplier.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Recommendations for technical means (see also section 7)

General ventilation and local exhaust ventilation as well as explosion protected electrical installation.

General ventilation and/ or local exhaust ventilation are recommended in order to keep the concentration of noxious agent in the air below the determined permissible concentration limits. The local exhaust ventilation is preferred because it enables to control the vapours emission at the source and prevents its spreading over the working area.

Exposure control

Permissible concentration limits at the work place for the product are not defined. It is recommended to use NDS limits defined for the main ingredients of the product:

Hexane (CAS 110-54-3)

HEXANE FRACTION

The highest permissible limits NDS: 72 mg/m³, NDSCh: - , NDSP: -- methods of exposure assessment in the air PN-Z-04136-3 ;2003 The basis and methods of assesment in the work environment 1999 encl.22

Hexane acyclic saturated isomers with exception of n-hexane (the mixture)

The highest permissible limits NDS: 400 mg/m³, NDSCh: - 3200 , NDSP:

- methods of exposure assessment in the air PN-Z-04136-3 ;2003 The basis and methods of assessment in the work environment 1997 encl.17

Requirements regarding the process, technical means and collective protection

Explosion protected ventilation and electrical installation. General ventilation and/ or local exhaust ventilation are recommended in order to keep the concentration of noxious agent in the air below the determined permissible concentration limits. The local exhaust ventilation is preferred because it enables to control the vapours emission at the source and prevents its spreading over the all working area.

PERMISSIBLE CONCENTRATION IN BIOMATERIAL

Not defined

Personal (individual) protection measures:

Necessity of use and selection of adequate personal protection measures should comply with type of hazard posed by the product, conditions at the work place and way of handling the product.

The protection means should meet requirements defined in the standards and regulations.

Respiratory tract: depending on conditions use certified AX type respirator equipped with filter or self-contained breathing apparatus.

Hands: coated, protective gloves (eg. neoprene).

Eyes: protective, close-fitting goggles.

Skin and body: apron or coated protective clothing.

Hygienic recommendations

Avoid exposure on the product vapours as well as direct contact with the liquid. Follow the general rules of hygiene: do not eat, do not drink, do not smoke tobacco at the work place, wash hands with water and soap every time after finishing work. Do not use the contaminated clothing. Remove contaminated, soaked clothing and keep it in a safe place away from sources of heat and ignition. Wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Colour	: colourless
Odour	: characteristic
Start boiling point	: 64 -90 °C
end boiling point	: approx. 120°C
Flash point:	: -23°C
Autoignition point	: 310°C
Explosion limits	: 1,2 - 7,4% vol.
Density at temp. 20°C	: not higher than 0,665-0,695 g/cm ³
Vapour pressure at temp. 40°C	: approx. 43 kPa
Vapours density in relation to air	: approx. 2,97

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Solubility	: insoluble in water; : soluble in hydrocarbons, alcohols, ethers, carbon disulfide, carbon tetrachloride, chloroform
Log Kow	2,1 – 6
Dynamic viscosity at 50°C	0,27 cP

OTHER DATA : None

10. STABILITY AND REACTIVITY

Stability

Under normal handling and storage conditions the product is stable. It is not subjected to dangerous polymerization.

Conditions to avoid

Sources of ignition, heat.

Materials to avoid

Strong oxidizing agents.

It softens or dissolves some of plastics.

Hazardous decomposition products

Unknown. The products released in the fire environment – see section 5.

11. TOXICOLOGICAL INFORMATION

Effects : irritant, depressive to central nervous system.

Routes of entry: respiratory tract, skin, alimentary canal

Acute exposure effects:

Inhalation: it causes respiratory tract mucous membranes irritation, redness and looseness of oral cavity mucous membranes, cough, headaches and dizziness, sometimes intoxication, naphtha odour in the exhaled air, drowsiness, toxic coma, memory disorders, blurred vision, nervousness and irritation, breathlessness, toxic bronchopneumonia, nausea, vomiting; in the event of exposure on high concentrations of vapours sudden loss of consciousness, convulsions and central nervous system irritation causing death may occur.

Ingestion: it causes nausea, belching with naphtha odour, heavy vomiting, temporary symptoms of liver damage, risk of aspiration pneumonia, bloody hemorrhages in lungs, pleural effusions.

Skin contact: it causes redness, ache, skin drying and cracking, irritation.

Eyes contact: vapours cause irritation of eyes mucous membranes, tearing; liquid splattering into eye may cause eyes irritation, conjunctival hyperemia, eyes irritation.

Chronic toxicity effects:

Central nervous system disorders within the peripheral nerves, which persist after exposure interruption; chronic conjunctivitis; sense of smell disorders.

Specific effects for human health:

The product is not classified as carcinogenic, mutagenic or harmful to reproduction capacity.

Acute toxicity

LD ₅₀ oral, in rat	>5000 mg/kg
LD ₅₀ dermal, in rabbit	>3160 mg/kg
LD50 inhalation, in rat	>12 mg/dm ³ /6h
	>5,24 mg/dm ³ /4h

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12. ECOLOGICAL INFORMATION

The hexane fraction is insoluble in water. It is lighter than water and it floats on water surface, from where it partially evaporates.

It is very toxic for aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Ecotoxicity

Crustaceans *Crangon crangon* LC₅₀/96h > 4,3 mg/l
Chaetogammarus marinus LC₅₀/96h > 2,6 mg/dm³

Permissible environmental contamination

Follow the standards regarding permissible environmental contamination which are defined in the regulations in force.

13. DISPOSAL CONSIDERATIONS

Follow the regulations of the Act of 27th April 2001 on waste materials (Dz. U. (official journal) 2001, No 62, item 628).

Do not empty the preparation into drains, water reservoirs, rivers, ground waters and soil, collect into labelled containers for further neutralization or recovery.

The packages contaminated with the preparation should be provided to the authorised companies in order to recovery or recycling.

Wastes classification according to the Regulation of the Minister of Environment of 27th September 2001 regarding the waste materials catalogue (Dz. U. (official journal) 2001, No 112, item 1206):

1. The preparation:

- Organic wastes containing dangerous substances: **the code** 16 03 05 or 07 01 04* Other organic solvents, washing liquids and mother liquors.

14. TRANSPORT INFORMATION



Classification

The regulations for hazardous materials transport RID, ADR, IMDG, ICAO/IATA are applicable for the product.

Correct name for transportation	CRUDE OIL DISTILLATES, I.N.O.
Technical name	Naphtha (petroleum), hydrotreated light;
Material identification number	UN 1268
Class / Classification code	3 / F1
Packaging group	II
Packages labelling	inscription „UN 1268”, warning label no 3
Hazard identification number	33

15. REGULATORY INFORMATION

Product classification

The product is classified as: highly flammable **F**, **R11**, harmful **Xn**, **R65**, and **R67**, irritant **Xi**, **R38**, dangerous for environment **N**, **R50/53**.

HEXANE FRACTION

Packages labelling:

Warning labels:



(F) HIGHLY FLAMMABLE



(Xn) HARMFUL



(N) DANGEROUS FOR ENVIRONMENT

It contains:

Naphtha (petroleum), hydrotreated light; Low-boiling hydrotreated oil fraction

The risk phrases (R)*:

R11 Highly flammable

R38 Irritating to skin

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation

R62 Possible risk of impaired fertility

R65 Harmful: may cause lung damage if swallowed

R67 Vapours may cause drowsiness and dizziness

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

The safety phrases for the conditions of safe use (S):

S9 Keep container in a well-ventilated place.

S16 Keep away from sources of ignition – Do not smoke tobacco.

S29 Do not empty into drains

S33 Take precautionary measures against static discharges

S36/37 Wear suitable protective clothing and gloves

S61 Avoid release to the environment. Refer to special instructions/safety data sheet

S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

Additional labelling:

EC Number: 265-151-9

Applicable domestic (national) regulations:

1. Regulation of the Minister of Health of 28th September, 2005, regarding the List of Hazardous Substances with their classification and labelling (marking) – (Dz. U. (official journal) No 201, item 1674)
2. Regulation of the Minister of Health of 13th November, 2007, regarding the Material Safety Data Sheet (Dz. U. (official journal) No 215, item 1588)
3. Regulation of the Minister of Health of 14th August, 2002, regarding the duty of providing the Material Safety Data Sheet for some preparations not classified as hazardous (Dz. U. (official journal) No 142, item 1194). AMENDMENT - Order of the Minister of Health of 30th August, 2007, repealing the regulation regarding the duty of providing the Material Safety Data Sheet for some preparations not classified as hazardous (Dz. U. (official journal) No 161/2007, item 1144).
4. Regulation of the Minister of Health of 2nd September, 2003, regarding the criteria and methods of classification of chemical substances and preparations (Dz. U. (official journal) No 171, item 1666) AMENDMENT - Order of the Minister of Health of 4th September, 2007, (Dz. U. (official journal) No 174/2007, item 1222)

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5. Regulation of the Minister of Health of 2nd September, 2003, regarding the labelling of packaging of hazardous substances and preparations (Dz. U. (official journal) No 173, item 1679) with later amendments
6. Regulation of the Minister of Health of 30th April 2004 regarding the hazardous substances and preparations the packaging of which must be fitted with child resistant fastening and tactile warning of danger (Dz.U. (official journal) No 128 item 1348)
7. Regulation of the Minister of Economics, Labour and Social Policy of 17th April 2003 regarding the restrictions, prohibitions and terms of the placing on the market or use of dangerous substances and preparations (Dz.U. (official journal) No 86/2003, item 799)
8. Regulation of the Minister of Health of 18th February 2003 regarding the method of assessment of risk to man and the environment caused by chemical substances (Dz.U. (official journal) No 52/2003, item 467)
9. Regulation of the Minister of Health of 18th February 2003 regarding the detailed data required for notification of new chemical substance documentation, what is essential for the assessment of risk to man and the environment caused by this chemical substance, (Dz.U. (official journal) No 50/2003, poz.437) AMENDMENT – Regulation of the Minister of Health of 22nd August 2007 (Dz. U. (official journal) No 160/2007 item 140)
10. Regulation of the Minister of Health of 4th October 2001 regarding the giving the Statute of the Inspector for Chemical Substances and Preparations (Dz.U. (official journal) No 121, item 1308)
11. Regulation of the Minister of Health of 18th February 2003 regarding the detailed data which should be provided to the Inspector for Chemical Substances and Preparations by the manufacturer or importer in case of placing on the market in Poland some of new chemical substances (Dz.U. (official journal) No 50/2003, item 436)
12. Regulation of the Minister of Health of 14th March 2003 regarding the methods of marking of places, pipelines, containers and tanks in which hazardous substances and preparations are stored (Dz.U. (official journal) No 61/2003, item 552)
13. Regulation of the Minister of Health of 17th January 2003 regarding the information about hazardous preparations for which providing Material Safety Data Sheet is not required (Dz.U. (official journal) No 19 of 07.02.2003, item 170)
14. Regulation of the Minister of Health of 18th February 2003 regarding the determination of quantity thresholds for new substances turnover and type of testing required in case of these thresholds exceeding (Dz.U. (official journal) No 50, item 438)
15. Regulation of the Minister of Health of 30th April 2003 regarding the amounts and methods of payment of fees on notification of new chemical substances and providing additional test results (Dz.U. (official journal) No 116, item 1102)
16. Regulation of the Minister of Health of 4th June 2003 regarding the criteria which must be fulfilled by laboratories and other units conducting tests on chemical substances and preparations and on the control and verification of the fulfillment of these criteria (Dz.U. (official journal) No 116, item 1103)
17. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) establishing a European Chemicals Agency, amending Directive 1999/45/EC

HEXANE FRACTION

16. OTHER INFORMATION

The data sheet is prepared on the basis of our knowledge and information collected to date, which apply only to the title product and cannot be transferred on similar products.

The information contained herein do not constitute any binding warranties (indirect or direct). Storage, application, disposal and also conditions and ways of handling are beyond our control. For that reasons we cannot be responsible for the losses, damages and costs which are the result or are connected with storage, application, disposal or way of handling with the material.

The present data sheet is prepared in order to provide information concerning the exposure on human health, safety and environmental protection. It is not the product specification and cannot be considered as presentation of data included in the specification.

Meaning of R Phrases listed in section 3.

R11 Highly flammable

R38 Irritating to skin

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation

R62 Possible risk of impaired fertility

R65 Harmful: may cause lung damage if swallowed

R67 Vapours may cause drowsiness and dizziness

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment