

# MATERIAL SAFETY DATA SHEET

MSDS No. 02-11

According to Regulation (EC) No.1907/2006, REACH



## 2-ETHYL-1-HEXANOL (OCTANOL)

Revision: 7 Last up date: October 14, 2008

Date issued: July 21,1999

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### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### 1.1. Identification of the substance/preparation

Trade Name	2-Ethyl-1-hexanol (Octanol)
Chemical Name	2-Ethylhexan-1-ol
Chemical Family	Alcohols
Chemical Formula	$\text{CH}_3(\text{CH}_2)_3\text{CH}(\text{C}_2\text{H}_5)\text{CH}_2\text{OH}$
Molecular Weight	130.3

#### 1.2. Uses of the substance/preparation

Production of PVC-plasticizers, plastics and synthetic rubber, synthetic lubricants (in form of dicarboxylic acid esters); oil, fat, wax and resin solvent.

#### 1.3. Company/undertaking identification

Company Name	OLTCHIM SA
Address	1, Uzinei Street, 240050-Romnicu V@lcea, Romania
Phone	+40 / 250 / 701200
Fax	+40 / 250 / 735446
e-mail	oltchim@oltchim.ro

1.4. Emergency telephone number +40 /250/738141

### 2. HAZARD IDENTIFICATION

**Health effects:** It is harmful if is swallowed, inhaled, or absorbed through skin. Vapors and mists severely irritate the eyes and respiratory tract especially when heated. May affect central nervous system, have a narcotic effect. May cause allergic skin reaction.

**Environmental effects:** No critical hazard to the environment in the ordinary sense of valid regulations. This product is readily biodegradable. No ecological problems are to be expected when the product is handled and used with due care and attention. 2-Ethylhexanol is not classified as dangerous for environmental according to Directive 67/548/EEC, Annex I.

**Emergency overview:** 2-Ethylhexanol is a combustible and flammable liquid. In contact with strong oxidizers may cause fire. Vapor/air mixtures are explosive above 75°C. The substance is very little soluble in water, floats on the water level.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Hazardous components /constituents	Concentration %wt.	CAS No.	EC No.	Annex I Index No.	Hazard Symbol	Risk phrases
2-Ethylhexanol	99,5	104-76-7	203-234-3	-	-	-

**4 . FIRST - AID MEASURES**

*Seek medical attention immediately in all cases of exposure!*

**Inhalation:** Inhalation of vapors or mist is irritating to the upper respiratory tract. May have narcotic effect. Difficult breathing, coughing, headache, dizziness and drowsiness may occur. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician.

**Skin contact:** Causes skin irritation. May be absorbed through skin. May cause sensitization or allergic skin reaction in some individuals. Prolonged skin contact may result in dermatitis. Wash the contaminated skin with plenty of soap or mild detergent and water for at least 15 minutes while removing contaminated clothing and shoes. If irritation persists after washing, get medical attention.

**Eye contact:** Causes irritation, redness and pain. Wash the eyes immediately with large amount of water lifting the upper and lower lids, until no evidence of chemical remains at least 15-20 minutes. If irritation persists after washing get medical attention. Contact lenses should not worn with this product.

**Ingestion:** May have narcotic effect. May cause abdominal pain, nausea, headache, dizziness and diarrhea. Large doses may affect kidneys and liver. Give large amount of water to drink. If large amounts were swallowed, get medical advise. Never give anything by mouth to mouth to an unconscious person.

**5. FIRE - FIGHTING MEASURES**

**Suitable extinguishing media:** Dry chemical, foam or carbon dioxide and water spray.

**Unsuitable extinguishing media:** Do not use a solid stream of water (water jet), since the stream will scatter and spread the fire. Use water spray to isolate the hazard area and to keep fire-exposed tanks cool.

**Exposure hazards:** 2-Ethylhexanol is a combustible and flammable liquid. In contact with strong oxidizers may cause fire. Vapor/air mixtures are explosive above 75°C. Vapor may flow along surface to distant ignition sources and flash back. Carbon monoxide and dioxide may form when heated to decomposition. In case of large fire and remove the containers if this it is possible.

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**Protection of fire-fighters:** Wear full protective clothing and self contained breathing apparatus with full face piece operated in positive pressure mode.

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### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Remove all sources of ignition. Ventilate area of leak or spill. Persons performing clean-up work should wear adequate personal protective equipment and a self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Keep unnecessary and unprotected personnel away from hazard area.

**Environmental precautions:** Prevent from contamination the ground and the surface water by isolating the hazard area. Contain and recover liquid when possible. Keep closed containers and dispose according to all applicable federal, state or local environment regulations

**Methods of cleaning up:** Absorb spills with dry sand, earth or similar non-combustible absorbent material then collect into drums for later disposal. For large spills, dike and pump into suitable containers for disposal. Use water spray to reduce vapors and flush area with water. Resulted waste water will be treated in biological treatment plant. Dispose of under valid legal waste regulations.

**Special precautions:** Do not use combustible materials, such as saw dust to absorb the spills.. Do not flush to sewer! Use only non sparking tools and equipment.

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### 7. HANDLING AND STORAGE

**Handling:** Protect containers from physical damage. Use non sparking tools, electric equipment and venting system. Sources of ignition such as smoking and open flames are prohibited when 2-ethylhexanol is handled. Do not use compressed air or oxygen for filling, discharging or handling. The personel which handling the product must wear protective equipment.

**Storage:** Store in a tightly closed containers in a cool, dry, well ventilated area away from sources of heat and incompatible substances. Drums must be equipped with self-closing valves, nitrogen blanket. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid).

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### 8 . EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure limits**      Not established

**Engineering control :** A system of local and/or general exhaust is recommended to keep employee exposure as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its sources, preventing dispersions of it into the general work area. Ventilation equipment should be explosion- proof if explosive concentration of dust, vapor or fume are present.

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**Respiratory protection:** For conditions of use where exposure to substance is apparent, consult an industrial hygienist. For emergencies or instances where the exposure level are not known, use a full face piece positive pressure air-supplied respirator.

**Hand protection :** Wear rubber ( nitrile) gloves.

**Eye / Face protection :** Use chemical safety goggles and/or a full face shield when is possible

**Skin protection :** Wear impervious protective clothing, including boots, gloves, lab coat apron or coveralls as appropriate, to prevent skin contact.

**Other precautions:** Maintain shower, eye wash fountain and quick-drench facilities in work area.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### General informations

Appearance	Clear liquid
Odor	Characteristic

### Important health, safety and environmental informations

pH value at 1g/l water	7
Boiling point	183-186° C
Flash point	75°C
Flammability	flammable
Explosive properties	explosive under open flame explosive limits in air: 1,1-7,7% vol
Oxidizing properties	no oxidizing properties
Vapor pressure at 20 °C	0,36 mmHg
Specific gravity (water=1) at 20° C	0,833
Solubility –water	1,1g/l
-organic solvents	miscible with most common solvents
Partition coefficient (log K <sub>ow</sub> )	3,1
Dynamic viscosity at 20° C	10 mPas
Vapor relative density (air=1)	4,5
Evaporation rate (BuAc=1)	0.01
Viscosity, dinamic	8,8 mPa*s

### Other informations

Melting point	-76° C
Autoignition temperature	270 °C

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## 10 . STABILITY AND REACTIVITY

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**Chemical stability:** Stable under ordinary conditions of use and storage.

**Conditions to avoid:** Heat, flame, sources of ignition and incompatibles.

**Materials to avoid:** Strong oxidizers and acids.

**Hazardous decomposition products:** Carbon monoxide and dioxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.

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## 11. TOXICOLOGICAL INFORMATION

### Animal toxicity data:

LD <sub>50</sub> /Oral, rat	>3730 mg/kg
LC <sub>50</sub> /Dermal, rat	>3000 mg/kg
LC <sub>50</sub> /inhalation - rat	> 20 mg/l/4h

### Acute toxicity

**Inhalation:** Inhalation of vapor or mist is irritating to the upper respiratory tract. May have narcotic effect. Difficult breathing, coughing, headache, dizziness and drowsiness may occur. May be absorbed into the bloodstream with symptoms similar to ingestion.

**Skin contact:** Causes skin irritation. May be absorbed through skin. May cause sensitization or allergic skin reaction in some individuals. Prolonged skin contact may result in dermatitis.

**Eye contact:** Causes irritation, redness and pain.

**Ingestion:** May have narcotic effect. May cause abdominal pain, nausea, headache, dizziness and diarrhea. Large doses may affect kidneys and liver.

**Chronic effect:** Persons with pre-existing skin disorders or eye problems or impaired liver, kidney or respirator function may be more susceptible to the effects of the substance.

### CMR effects (Carcinogenity, Mutagenicity, toxicity for Reproduction):

**Carcinogenity:** No carcinogenic effect.

**Mutagenicity:** No mutagenic effect.

**Toxicity for Reproduction:** Not affect reproductive parameters.

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Fish	<i>P. promelas</i>	LC <sub>50</sub> =29.7mg/l/96 hours
	<i>Onchorhynchus mykiss</i>	LC <sub>50</sub> >7.5mg/l/96 hours
Daphnia	<i>Daphnia magna</i>	LC <sub>50</sub> =39mg/l/48 hours
Algae	<i>Desmodesmus subspicatus</i>	IC <sub>50</sub> =11.5mg/l/72 hours

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Bacteria      *Ps.putida*

EC<sub>50</sub>=540mg/l/18hours

**Mobility:** 2-Ethylhexanol may enter the environment from industrial discharges, municipal waste treatment, plant discharges or spills. Due to the low vapor pressure, the chemical is extended in air in limited amount. Volatilization is not a dominant transport process.

Because 2-ethylhexanol is slightly soluble in water, may be expected to sink rapidly soils as consequence may be transported into groundwater by leaching through fissures rather than matrix pores.

**Persistence and degradability:** When released into the air, this material may be readily degraded by reaction with photochemically produced hydroxyl radicals with a half-life of 10 hours. When released into the soil, watercourses and groundwater this chemical may be readily biodegraded under aerobic conditions (95% after 5 days).

**Bioaccumulative potential:** With regard to bio concentration factor BCF=13, bioaccumulation in organism is not expected.

**Bioaccumulation in Aquatic Organisms:** The concentration of 2-ethylhexanol found in fish tissue is expected to be about the same as the average concentration of 2-ethylhexanol in the water.

**Other adverse effects:** The substance has a harmful effect on aquatic organisms. No ecological problems are to be expected when the product is handled and used with due care and attention.  
*Do not allow to enter waters, waste water or soil!*

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### 13. DISPOSAL CONSIDERATIONS

**Waste treatment:** What ever cannot be saved for recovery or recycling should be handled as non-hazardous waste. Any disposal practice must be in compliance with all local, regional and national regulations. Do not dump into any sewers, on the ground, or into any body of water.

**Packaging treatment:** The empty containers/tanks are treated with steam and rinsed with plenty of water. The resulted effluent are treated in the same way as waste. The empty and clean containers are to be reused in conformity with regulations.

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### 14. TRANSPORT INFORMATION

2-Ethylhexanol has not specific regulations of transportation.

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### 15. REGULATORY INFORMATION

2-ETHYL-1-HEXANOL is not classified and labeled as hazardous material according to Directive 67/548/EC.

EC-Number:      203-234-3

