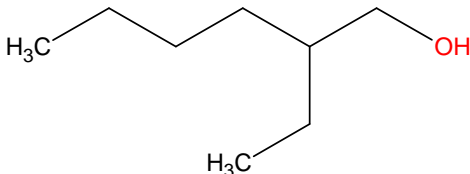


1. PRODUCT NAME

- a/ trade name
- in Polish 2-Etyloheksanol
 - in English 2-Ethylhexanol
 - in German 2-Äthylhexanol
- b/ chemical name
- in Polish 2-Etyloheksan-1-ol
 - in English 2-Ethylhexan-1-ol
 - in German 2-Äthylhexanol
- c/ proper shipping name not applicable (not regulated by RID/ADR)
- d/ chemical formula
- molecular formula $C_8H_{18}O$
 - semi-structural formula $CH_3(CH_2)_3CH(C_2H_5)CH_2OH$
 - structural formula
- 
- e/ PKWiU: 20.14.22.9
- f/ CN: 2905 16 85

2. QUALITY REQUIREMENTS

2.1. General requirements

2-Ethylhexanol is a clear and colourless liquid, with the specific odour.

2.2. Physical-chemical properties

Item	Specification	Value	Unit	Test method	Foreign equivalent
1	2-Ethylhexanol, min.	99.7	[wt %]	Internal method of Grupa Azoty ZAK S.A. (GC)	GC
2	Colour, Pt-Co scale max.	5	[APHA]	PN-C-04534-01:1981	ISO 6271
3	Density at 20°C ¹ , min. max.	0.832 0.834	[g/cm ³]	PN-EN ISO 12185:2002	ISO 12185
4	Acids as acetic acid ¹ , max.	0.01	[wt %]	Internal method of Grupa Azoty ZAK S.A.	ASTM D 1613
5	Aldehydes as 2-ethylhexanal ¹ , max.	0.05	[wt %]	Internal method of Grupa Azoty ZAK S.A.	BS 4583
6	Water content max	0.05	[wt %]	PN-EN ISO 12937:2005	ISO 12937:2000

^{1/} These parameters are covered by the producer's guarantee, to be analyzed in case of a claim only.

3. APPLICATION(s)

In the production of: low-volatility esters which are then used as plasticisers in plastics; additives which improve thermal stability and oxidation resistance of plastics; surface active agents; anti-foaming agents for the textile and paper-making industries; solvents for extraction processes; brake fluids; fuel improvers (2-ethylhexyl nitrate); 2-ethylhexyl acrylate; ethoxylated mixes (ethylene oxide derivatives); auxiliaries for agriculture; components for fire-retardant formulations (brominated derivatives); cosmetics; and pharmaceuticals.

It is also used as: low-volatility solvent for vegetable oils, animal fats, resins; waxes and petrochemical products; component of low-volatility solvent systems which are used in the dye industry and/or in the paint and lacquer industry (e.g. in printer's inks, in stamp inks, in dip painting systems, etc.); additive which improves plastic formability and gloss of thermosetting plastics and hot-laid linings; dispersing and wetting agent in colour pastes.

4. STORAGE STABILITY

The product is chemically stable. When the storage and transport conditions as per sections 7 and 8 are observed, the product will maintain its quality parameters as per section 2 above over the period of 6 months from the date of loading.

5. QUALITY DOCUMENT

Unless the client's order (or contract) demands otherwise, each shipment of the product shall be provided with the quality certificate to evidence that the product quality parameters satisfy the requirements listed in the contract and/or in this Specification.

6. PACKING

6.1. General requirements

2-Ethylhexanol is available in bulk shipments, in steel rail tank cars, in tank-containers, in road tankers or flexitanks.

Other types of containers are also allowable, if they protect the product sufficiently to maintain its quality, and if they provide safety in transport, storage, handling and use. In that case, the client should:

- Submit the valid certificate which permits the use of that type of containers in storage and transport, or his own statement in writing on the subject.
- Place marking on the containers, in accordance with applicable regulations.

2-Ethylhexanol may not be transported together with strong oxidisers and acids.

6.2. Labelling applicable for client's unit containers

2-Ethylhexanol is classified as a hazardous substance. Each unit container shall be provided with a tangible inscription or a label specifying the following information:

a/ According to Regulation (EC) № 1272/2008:

<i>Identification data:</i>	name, address and phone number of the supplier (or suppliers)
<i>Information on product amount:</i>	nominal amount of the product in the packages which are made available to the public, unless that amount has been specified elsewhere on the package
<i>Product identifier:</i>	
<i>Name of substance:</i>	“2-Ethylhexan-1-ol”
<i>EC number:</i>	“EC number 203-234-3”
<i>CAS number:</i>	“CAS number 104-76-7”

Hazard pictograms

GHS07: exclamation mark



Signal word “Warning”

<i>Hazard statements:</i>	
H332:	“Harmful if inhaled.”
H315:	“Causes skin irritation.”
H319:	“Causes serious eye irritation.”
H335:	“May cause respiratory irritation.”

Precautionary statements:

- P261 "Avoid breathing mist/vapours/spray."
 P280 "Wear protective gloves/protective clothing/face protection."
 P305+P351+P338: "IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing."
 P312: "Call a POISON CENTER/doctor if you feel unwell."

b/ According to RID/ADR:

The product is not a dangerous material in accordance with RID/ADR.

c/ Safety signs as per ISO 7010:2011

- sign ISO 7010-P003 "No open flame; Fire, open ignition source and smoking prohibited"



d/ Handling signs as per ISO 780:1997:

- sign № 4 "Keep away from sunlight"



- sign № 17 "Temperature limits" with the values: min. 0°C and max. 49°C



e/ Inscription

- "Spent packages must be transferred to an authorised waste collecting company."

f/ Additional labelling required by national/local legislation

7. STORAGE

7.1. Requirements for warehouses

- Local exhaust ventilation systems, to eliminate vapours from the places of their emission, and general ventilation systems in rooms.
- Protection against accumulation of static electricity - ignition of organic vapours may be initiated by any static discharge.
- Sprinkler systems, to cool down tanks/containers with water spray in case of fire.
- Liquid-impervious floors which make it possible to collect the spilled material and prevent its entry to the sewage system.
- Ex-proof wiring, lighting and ventilation systems.
- The storage rooms should be cool and dry.

7.2. Storage conditions

- Keep away from ignition sources - No smoking.
- Keep container tightly closed, in cool (0 to 49°C; 32 to 120°F) and well ventilated places.
- Handle and open containers with care.
- Containers and tanks must be properly marked.
- Containers and tanks must be made of the materials which are resistant to the product attack.

7.3. Recommendations for occupational hygiene

- Avoid any direct contact with skin, eyes and clothing.
- Wash hands before meals and directly after handling the product.

7.4. Recommendations for joint storage

- Incompatible substances: strong oxidisers
- Temperature class: T3

8. TRANSPORT

8.1. General requirements

2-Ethylhexanol is transported in rail tankers, in road tankers, in tank-containers and/or flexitanks.

The rail tankers, road tankers and tank-containers must be checked for cleanness before loading by a person who permits them to be loaded. They need to have washing/ cleaning certificates and their approval documents need to be valid.

The client's unit containers must meet the requirements as per Section 6.

Unit containers should be transported by covered means of transport.

2-Ethylhexanol may not be transported together with strong oxidisers and acids.

2-Ethylhexanol is not a dangerous goods in accordance with RID/ADR.

8.2. Labelling applicable for means of transport as per RID/ADR

Not applicable. The product is not regulated by RID/ADR.

9. OTHER INFORMATION

2-Ethylhexanol is Kosher-certified.

10. REFERENCE DOCUMENTS

Product Sheet	PM-006-02 "2-Ethylhexanol. Material Safety Data Sheet."
PN-C-04534-01:1981	Chemical analysis - Determination of colour of chemical products by Hazen units (platinum-cobalt scale).
PN-EN ISO 12185:2002	Crude petroleum and petroleum products -- Determination of density -- Oscillating U-tube method.
PN-EN ISO 12937:2005	Petroleum products -- Determination of water -- Coulometric Karl Fischer titration method
Classification Certificate No 115/IPO-BC/2011	

11. IN PLACE OF

PM-006-01-2.0 "2-Ethylhexanol. Specification"