

Safety Data Sheet

2-ETHYLHEXANOL

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Version: 6.0

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1. Identification

Product identifier used on the label

2-ETHYLHEXANOL

Recommended use of the chemical and restriction on use

Recommended use*: Chemical

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula: C₈H₁₈O
Chemical family: alcohols
Synonyms: 1-Hexanol,2-Ethyl

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Flam. Liq.	4	Flammable liquids
Acute Tox.	4 (Inhalation - mist)	Acute toxicity
Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	2A	Serious eye damage/eye irritation
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Aquatic Acute	3	Hazardous to the aquatic environment - acute

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Label elements

Pictogram:



Signal Word:
Warning

Hazard Statement:

H227	Combustible liquid.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye/face protection.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/gas/mist/vapours.
P273	Avoid release to the environment.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P311	If eye irritation persists: Call a POISON CENTER or doctor/physician.
P362 + P364	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use... to extinguish.

Precautionary Statements (Storage):

P233	Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.
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Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. See section 12 - Results of PBT and vPvB assessment.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

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Emergency overview

WARNING:
COMBUSTIBLE LIQUID.
Skin Irritant
Eye irritant.
MAY CAUSE CENTRAL NERVOUS SYSTEM DAMAGE BASED ON ANIMAL DATA.
Repeated overexposure may result in toxicity.
MAY CAUSE LIVER DAMAGE BASED ON ANIMAL DATA.
MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA.
Avoid all sources of ignition: heat, sparks, open flame.
Use with local exhaust ventilation.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.
Wear full face shield if splashing hazard exists.
Wear a NIOSH-certified (or equivalent) organic vapour respirator.
Wear chemical resistant protective gloves.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
104-76-7	> 99.5 %	2-ethylhexan-1-ol

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
104-76-7	> 99.5 %	2-ethylhexan-1-ol

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:

Rinse mouth and then drink plenty of water. Induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

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Symptoms: Overexposure may cause:, headache, dizziness, incoordination, coma, difficulty breathing
Hazards: No hazard is expected under intended use and appropriate handling.

Indication of any immediate medical attention and special treatment needed

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, alcohol-resistant foam, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
The product is combustible. Cool endangered containers with water-spray.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

If exposed to fire, keep containers cool by spraying with water. Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Wear appropriate respiratory protection. Use personal protective clothing. Ensure adequate ventilation. Can release flammable vapours. Note that this gas is heavier than air and can spread along the ground in the direction of the wind. Sources of ignition should be kept well clear.

Environmental precautions

This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

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Ensure thorough ventilation of stores and work areas.

Use antistatic tools. Ensure thorough ventilation of stores and work areas. Protect against heat. Handle in accordance with good industrial hygiene and safety practice. Avoid all sources of ignition: heat, sparks, open flame.

Protection against fire and explosion:

Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Avoid all sources of ignition: heat, sparks, open flame. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Substance/product forms combustible mixtures with air. Prevent electrostatic charge accumulation. Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition.

Conditions for safe storage, including any incompatibilities

Segregate from oxidizing agents. Segregate from acids and bases.

Further information on storage conditions: Containers should be stored tightly sealed in a dry place. Avoid extreme heat. Keep away from sources of ignition - No smoking. Keep container tightly closed and dry.

8. Exposure Controls/Personal Protection

Advice on system design:

Provide local exhaust ventilation to maintain recommended P.E.L.

Personal protective equipment

Respiratory protection:

Wear the following respiratory protection if exposure limits may be exceeded: Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. Wear a NIOSH-certified (or equivalent) organic vapour respirator.

Hand protection:

Chemical resistant protective gloves, nitrile rubber (Buna N)

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Work place should be equipped with a shower and an eye wash. Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapours/mists. Avoid contact with the skin, eyes and clothing. Wash soiled clothing immediately. When using, do not eat, drink or smoke. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	mild, sweetish	
Odour threshold:		not determined
Colour:	clear	

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pH value:		neutral, of low solubility
Melting point:	-89 °C	(ASTM D97)
Boiling point:	186 °C	(1,013 hPa) (OECD Guideline 103)
Sublimation point:		No applicable information available.
Flash point:	75 °C	(closed cup)
Flammability:	not readily ignited	
Lower explosion limit:		For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:		For liquids not relevant for classification and labelling.
Autoignition:	280 °C	(Directive 92/69/EEC, A.15)
Vapour pressure:	< 1 hPa	(20 °C) (measured)
Density:	0.832 g/cm ³	(20 °C) (ASTM D4052)
Relative density:	0.832	
Vapour density:		not determined
Partitioning coefficient n-octanol/water (log Pow):	2.9	(25 °C) (OECD Guideline 117)
Self-ignition temperature:		not self-igniting
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Viscosity, dynamic:	9.845 mPa.s	(20 °C)
Viscosity, kinematic:		No applicable information available.
Solubility in water:	0.9 g/l	(20 °C)
Solubility (quantitative):		No applicable information available.
Solubility (qualitative):	No applicable information available.	
Molar mass:	130.23 g/mol	
Evaporation rate:		Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing. (other)

Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
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Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is chemically stable.

Reacts with aluminum at high temperature.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame.

Incompatible materials

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strong oxidizing agents
oxidizing agents, organic acids, alkalies

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic after a single skin contact. Of moderate toxicity after short-term inhalation.

If used as intended, this product is not expected to present a physical or health hazard.

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact. Of moderate toxicity after short-term inhalation.

Oral

Type of value: LD50

Species: rat (male)

Value: 2,047 mg/kg (similar to OECD guideline 401)

Inhalation

Type of value: LC50

Species: rat (male/female)

Exposure time: 4 h

An aerosol was tested.

Dermal

Type of value: LD50

Species: rat (male/female)

Value: > 3,000 mg/kg (OECD Guideline 402)

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Eye contact causes irritation. Skin contact causes irritation.

Skin

Species: rabbit

Result: Irritant.

Method: OECD Guideline 404

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Eye

Species: rabbit
Result: Irritant.
Method: OECD Guideline 405

Sensitization

Assessment of sensitization: The substance did not cause skin sensitization in humans.

Human Maximization Test

Species: human
Result: Non-sensitizing.

Aspiration Hazard

not applicable

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: Repeated exposure to high doses of the substance causes reversible liver changes in rodents. According to present knowledge, these effects do not occur in man.

May cause liver and kidney damage.

Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with microorganisms and mammalian cell culture. The substance was not mutagenic in studies with mammals. The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not genotoxic in mammalian cell culture. The substance was not genotoxic in a test with mammals.

Carcinogenicity

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by gavage, a carcinogenic effect was not observed.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Teratogenicity

Assessment of teratogenicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Symptoms of Exposure

Overexposure may cause: headache, dizziness, incoordination, coma, difficulty breathing

Medical conditions aggravated by overexposure

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See MSDS section 11 - Toxicological information.

12. Ecological Information

Toxicity

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Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) 28.2 mg/l, Pimephales promelas (Directive 84/449/EEC, C.1, Flow through.)

The statement of the toxic effect relates to the analytically determined concentration. Literature data.

LC50 (96 h) 17.1 mg/l, Leuciscus idus (OECD 203; ISO 7346; 84/449/EEC, C.1, Flow through.)

Aquatic invertebrates

EC50 (48 h) 39 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)

Nominal concentration.

Aquatic plants

EC50 (72 h) 16.6 mg/l (growth rate), Scenedesmus subspicatus (Directive 88/302/EEC, part C, p. 89)

Nominal concentration.

Chronic toxicity to fish

Study does not need to be conducted.

Chronic toxicity to aquatic invertebrates

Study does not need to be conducted.

Assessment of terrestrial toxicity

Study scientifically not justified.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

Study scientifically not justified.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

Elimination information

79 - 99.9 % BOD of the ThOD (14 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, Inoculum conforming to MITI requirements (OECD 301C))

Assessment of stability in water

Study scientifically not justified.

Assessment photodegradation

After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

The product has not been tested. The statement has been derived from the structure of the product.

Bioaccumulative potential

Assessment bioaccumulation potential

Significant accumulation in organisms is not to be expected.

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Mobility in soil

Assessment transport between environmental compartments

Adsorption to solid soil phase is not expected.

Additional information

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

Other ecotoxicological advice:
Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:

Do not discharge substance/product into sewer system. Dispose of in accordance with national, state and local regulations.

Container disposal:

Dispose of in accordance with national, state and local regulations. Empty containers or liners may retain product residues. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Classified as combustible liquid in containers greater than 119 gallons.

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute; Chronic; Fire

CERCLA RQ

CAS Number

Chemical name

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100 LBS 142-82-5 heptane

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
MA, NJ, PA	104-76-7	2-ethylhexan-1-ol

NFPA Hazard codes:

Health : 2 Fire: 2 Reactivity: 0 Special:

HMIS III rating

Health: 2^a Flammability: 2 Physical hazard: 0

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Aquatic Acute	3	Hazardous to the aquatic environment - acute
Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	2A	Serious eye damage/eye irritation
Flam. Liq.	4	Flammable liquids
Acute Tox.	5 (oral)	Acute toxicity
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Acute Tox.	4 (Inhalation - mist)	Acute toxicity

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2015/02/24

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