



SAFETY DATA SHEET

2-ETHYL HEXANOL

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	2-ETHYL HEXANOL
Product number	2009905
Internal identification	19150
Synonyms; trade names	2-ethylhexan-1-ol
REACH registration number	01-2119487289-20-xxxx
CAS number	104-76-7
EC number	203-234-3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Formulation & (re)packing of substances and mixtures Distribution of substance Uses in coatings Use in cleaning agents Use in oil field drilling and production operations Use as a functional fluid Laboratories Dilution of a concentrate
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1.3. Details of the supplier of the safety data sheet

Supplier	Haltermann Carless UK Ltd Head Office - Cedar Court, Guildford Road, Fetcham, Leatherhead, Surrey KT22 9RX United Kingdom +44(0)1372 360000 +44(0)1372 380400
Contact person	MSDSTeam@h-c-s-group.com
Manufacturer	Haltermann Carless UK Ltd Head Office - Cedar Court, Guildford Road, Fetcham, Leatherhead, Surrey KT22 9RX United Kingdom +44(0)1372 360000 +44(0)1372 380400

1.4. Emergency telephone number

Emergency telephone	Please contact SHE Department on +44(0) 1255 502372
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335
Environmental hazards	Not Classified

Classification (67/548/EEC or 1999/45/EC) Xn;R20. Xi;R36/37/38.

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Human health The liquid may be irritating to eyes, respiratory system and skin.

2.2. Label elements

EC number 203-234-3

Pictogram



Signal word Warning

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing vapour/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with national regulations.

Supplementary precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name 2-ETHYL HEXANOL
REACH registration number 01-2119487289-20-xxxx
CAS number 104-76-7
EC number 203-234-3
Composition comments Mono-constituent substance

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Remove affected person from source of contamination.

Inhalation Move affected person to fresh air at once. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

Ingestion Give plenty of water to drink. Never give anything by mouth to an unconscious person. Do not induce vomiting. Get medical attention immediately.

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Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention. Get medical attention if irritation persists after washing.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	Upper respiratory irritation. Severe irritation of nose and throat.
Ingestion	May cause nausea, headache, dizziness and intoxication. May cause discomfort if swallowed.
Skin contact	Skin irritation.
Eye contact	Irritation of eyes and mucous membranes.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Risk of explosion if heated.
Hazardous combustion products	Oxides of carbon.

5.3. Advice for firefighters

Protective actions during firefighting	Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. No action shall be taken without appropriate training or involving any personal risk.
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6.2. Environmental precautions

Environmental precautions	Do not discharge into drains or watercourses or onto the ground.
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6.3. Methods and material for containment and cleaning up

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Methods for cleaning up Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Absorb in vermiculite, dry sand or earth and place into containers. Avoid the spillage or runoff entering drains, sewers or watercourses. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Static electricity and formation of sparks must be prevented. Provide adequate ventilation. Eliminate all sources of ignition. Storage tanks and other containers must be earthed. Avoid inhalation of vapours and contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep away from heat, sparks and open flame. Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid contact with oxidising agents. Take precautionary measures against static discharges. Store at temperatures between 0°C and 50°C.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): No std.

Short-term exposure limit (15-minute): No std.

DNEL

Industry - Inhalation; Short term local effects: 106.4 mg/m³
 Industry - Dermal; Long term systemic effects: 23 mg/kg/day
 Industry - Inhalation; Long term systemic effects: 53.2 mg/m³
 Consumer - Inhalation; Short term local effects: 53.2 mg/m³
 Consumer - Dermal; Long term systemic effects: 11.4 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 2.3 mg/m³
 Consumer - Oral; Long term systemic effects: 1.1 mg/kg/day

PNEC

- Fresh water; 0.017 mg/l
 - Marine water; 0.0017 mg/l
 - STP; 10 mg/l
 - Sediment Freshwater; 0.28 mg/kg
 - Sediment Marinewater; 0.028 mg/kg
 - Soil; 0.047 mg/kg
 - Intermittent release; 0.17 mg/l
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8.2. Exposure controls

Protective equipment



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Appropriate engineering controls	Use explosion-proof general and local exhaust ventilation.
Eye/face protection	The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. It is recommended that gloves are made of the following material: Nitrile rubber. Polyvinyl chloride (PVC). To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination. Provide eyewash station and safety shower.
Hygiene measures	Provide eyewash station. Do not smoke in work area. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Take off contaminated clothing and wash it before reuse. When using do not eat, drink or smoke.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Organic vapour filter.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Colourless.
Odour	Alcoholic.
Odour threshold	0.08 ppm
pH	pH (concentrated solution): 5.8
Melting point	-89°C
Initial boiling point and range	184°C @ 760 mm Hg
Flash point	77°C CC (Closed cup).
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 12.7 Lower flammable/explosive limit: 0.79
Vapour pressure	<0.1 kPa @ °C
Vapour density	4.5
Relative density	0.832 @ 20°C
Solubility(ies)	0.9 g/l @ °C Slightly soluble in water. Soluble in the following materials: Organic solvents.
Partition coefficient	: 2.9
Auto-ignition temperature	280°C
Viscosity	9.8 mPa s @ 20°C

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Explosive properties Not explosive

9.2. Other information

Refractive index 1.431

Molecular weight 130.23

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No test data specifically related to reactivity available for this product or its ingredients.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Under normal conditions of storage and use, no hazardous reactions will occur.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Heating may generate the following products: Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,290.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 3,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 0.89

Species Rat

ATE inhalation (vapours mg/l) 0.89

Skin corrosion/irritation

Animal data Highly irritating.

Serious eye damage/irritation

Serious eye damage/irritation Moderately irritating.

Skin sensitisation

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Skin sensitisation	Guinea pig maximization test (GPMT) - Human: Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Chromosome aberration: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	NOAEL 500 mg/kg, Oral, Rat Highly unlikely to be carcinogenic and are not classifiable as carcinogens
<u>Reproductive toxicity</u>	
Reproductive toxicity - development	Maternal toxicity: - NOAEL: 191 mg/kg, Oral, Mouse
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	NOAEC 120 , Inhalation, Rat Units ppm Stomach / intestinal disorders, liver disorders (peroxisome proliferation)
Target organs	Gastro-intestinal tract Liver
<u>Skin contact</u>	
Skin contact	Irritating to skin. Not a skin sensitiser.
<u>Eye contact</u>	
Eye contact	Irritating to eyes.

SECTION 12: Ecological Information

12.1. Toxicity

Acute toxicity - fish	LC50, 96 hours, 96 hours: 17.1 mg/l, Leuciscus idus (Golden orfe)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours, 48 hours: 39 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours, 72 hours: 11.5 mg/l, Desmodesmus subspicatus
Acute toxicity - microorganisms	NOEC, >: > 300 mg/l, Activated sludge 24 hrs

12.2. Persistence and degradability

Biodegradation	Water and sediment - Degradation (%) 80: > 14 days
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12.3. Bioaccumulative potential

Bioaccumulative potential	BCF: 25.3,
Partition coefficient	: 2.9

12.4. Mobility in soil

Adsorption/desorption coefficient	- log Koc: 1.42 @ °C
Surface tension	47 mN/m @ 20°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
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12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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General information	Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Disposal methods	Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Waste class	This material and container must be disposed of as a HAZARDOUS WASTE.

SECTION 14: Transport information

General	ADN Tanker; UN 9006; PSN Environmentally hazardous substance, liquid, n.o.s.; class 9; subsidiary risk N3, F ICAO / IATA - UN No 3334; PSN Aviation regulated liquid, n.o.s.; class 9
Road transport notes	Not regulated.
Rail transport notes	Not regulated.
Sea transport notes	Not regulated.
<u>14.1. UN number</u>	Not applicable.
UN No. (ADR/RID)	None
<u>14.2. UN proper shipping name</u>	
<u>14.3. Transport hazard class(es)</u>	
<u>14.4. Packing group</u>	
<u>14.5. Environmental hazards</u>	
Environmentally hazardous substance/marine pollutant	No.
<u>14.6. Special precautions for user</u>	
<u>14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</u>	
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Ship Type: 2; Pollution Category: Y

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).
EU legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

2-ETHYL HEXANOL

EU - EINECS/ELINCS

EINECS

Canada - DSL/NDSL

DSL

US - TSCA

Yes

Australia - AICS

Yes

Japan - MITI

Yes

Korea - KECI

Yes

China - IECSC

Yes

Philippines – PICCS

Yes

New Zealand - NZIOC

Yes

SECTION 16: Other information

Revision comments	New issue in new format
Issued by	HCS Group Technical Team
Revision date	28/01/2016
Revision	7
Supersedes date	17/06/2015
SDS number	20058
SDS status	Approved.
Risk phrases in full	R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin.
Hazard statements in full	H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation.

The information in this document has been compiled on the basis of the best available knowledge in accordance with the legislative requirements. It does not imply that the information is complete or accurate in all cases. It is the user's responsibility to satisfy themselves as to the application of the information and/or the recommendations given for their own use.