Material Safety Data Sheet
2-ethylhexanol

Section 1 - Product Identification

Synonyms : Asooctyl alcohol
Molecular Weight : 130.23 g/mol
Chemical Formula : $C_8H_{18}O$
Company Identification : Tradeasia International Pte. Limited
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore
Tel: +65-6227 6365
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Email: contact@chemtradeasia.com

Recommended use of the chemical and restrictions:

- Laboratory chemicals
- Manufacture of substances

Section 2 – Composition/Information on Ingredients

Chemical Name	EC No/CAS No	Purity, %
2-ethylhexan-1-ol	CAS-No. 104-76-7 EC-No. 203-234-3	<100%

Section 3 – Hazards Identification

3.1 Classification of the substance according to GHS

Flammable liquids 4
H227 Combustible liquid
Skin Irritation 2
H315: Causes skin irritation
Eye irritant 2A
H319: Causes serious eye irritation.
Acute Toxicity (Inhalation) 4
H332: May be harmful if inhaled.
Spectic target organ toxicity (Inhalation) 3
H335: May cause respiratory irritation

3.2. GHS Label elements, including precautionary statements

Warning
H227: Combustible liquid
H319: Causes serious eye irritation.
H315: Causes skin irritation
H335: May cause respiratory irritation
H332: May be harmful if inhaled.

Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor 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.
P332 + P313 If skin irritation occurs: Get medical advice/ atten- tion.
P337 + P313 If eye irritation persists: Get medical advice/ atten- tion.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alco- hol-resistant foam to extinguish.Storage:P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste dis- posal plant.

3.3. Other hazards which do not result in classification
None known.

Section 4 – First-Aid Measures

4.1. Description of first aid mesaures
Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.Wash contaminated clothing before re-use.Get medical attention.Thoroughly clean shoes before reuse.
Eye contact
Remove contact lenses, if present and easy to do. Continue rinsing.If eye irritation persists: Get medical advice/ attention.
Inhalation
Move to fresh air.Treat symptomatically.If symptoms persist, call a physician.
Ingestion
Seek medical advice.
Note to physicians
Treat symptomatically.
4.2. Most important symptoms and effects, both acute and delayed
N.A.
4.3. Indication of any immediate medical attention and special treatment needed
N.A.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media
Carbon dioxide, dry chemical, water spray
5.2. Specific hazards arising from the chemical
Water may be ineffective.The product will float on water and can be reignited on surface water.
5.3. Special protective actions for fire-fighters
N.A.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective equipment.Local authorities should be advised if significant spillages cannot be contained.
6.2. Environmental precautions
Avoid release to the environment.
6.3. Methods and material for containment and cleaning up
Land spill)
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).After cleaning, flush away traces with water. Eliminate all ignition sources if safe to do so.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
Avoid inhalation of vapor or mist.Avoid contact with skin, eyes and clothing.Do not swallow.Ensure adequate ventilation.Wash thoroughly after handling.Keep away from fire (No Smoking).Keep away from fire, sparks and heated surfaces.
7.2. Conditions for safe storage, including any incompatibilities
Keep container closed when not in use. Store locked up.

Section 8 – Exposure Controls/Personal Protection

8.1. Control parameters
Nil
8.2. Appropriate engineering controls
Contains no substances with occupational exposure limit values.
8.3. Individual protection measures, such as personal protective equipment (PPE)
Respiratory protection
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Eyes and hands protection
Wear safety glasses with side shields (or goggles). Face-shieldAlways wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Hand
Wear suitable gloves.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Appearance : Liquid
Odour : Mustry
Odour threshold : 0.07ppm
Melting point : -76 to -70°C
Boiling point : 184 °C
Flash point : 73.3°C
Evaporation rate : N.A.
Flammability : N.A.
Upper/lower flammability or explosive limits : Non explosive
Vapour pressure : N.A.
Vapour density : N.A.
Relative density : 0.833
Solubility in water : 0.1g/l
Partition coefficient: Pow: 1,260 log Pow: 3.1
Auto-ignition temperature : N.A.

Decomposition temperature : Method: DSC, No exotherm to 500°C
Viscosity : N.A.

9.2. Other information

Molecular weight : 130.23g/mol

Section 10 – Stability and Reactivity

10.1. Reactivity

Stable product.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous decomposition products formed under fire conditions.

10.4. Conditions to avoid:

Heat, flames and sparks.

10.5. Incompatible materials

Oxidising agent

10.6. Hazardous decomposition products

CO2, CO

Section 11 – Toxicological Information

11.1. Information on toxicological effect

11.1.1. Substances

Acute toxicity[(2)]

LD50 Oral (Rat): 3,290 mg/kg Assessment: Not classifiedRemarks: May be harmful if swallowed.

Skin corrosion / irritation

Causes skin irritation.

Eye irritation

Serious eye irritant/eye damage.

Respiratory or skin sensitization

Not classified

Germcell mutagenicity

Not classified

Carcinogenicity

Not classified

Reproductive toxicity

Not classified

STOT-single exposure

May cause respiratory irritation

STOT-repeated exposure

Not classified

Aspiration Hazard

Not classified

Section 12 – Ecological Information

12.1.Toxicity

Algal toxicity[(9)]

EC50:Remarks: Not expected to be harmful to aquatic organisms.

Invertebrate toxicity[(10)]

EC50 (Daphnia magna (Water flea)): 39 mg/l

Chronic toxicity: NOEC (Daphnia magna (Water flea)): 7.5 µg/l Exposure time: 21 dRemarks: Read-across from a similar material

Fish toxicity[11]

LC50 (Pimephales promelas (fathead minnow)): 28.2 mg/l

12.2. Persistence and degradability

Readily biodegradable.

12.3. Bioaccumulative potential

No Data Available

12.4. Mobility in soil

No Data Available

12.5. Other adverse effects

No Data Available

Section 13 – Disposal Considerations

13.1. Disposal methods

The generation of waste should be avoided or minimized wherever possible.Dispose of in accordance with local regulations.

Section 14 – Transport Information

Borax pentahydrate has no UN Number, and is not regulated under international rail, road, water or air transport regulations.

14.1. UN number : N.A.
14.2. UN proper shipping name : N.A
14.3. Transport of hazard classes : N.A
14.4. Packing group : N.A
14.5. Environmental hazards : N.A.
14.6. Special precautions for user : N.A
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

Section 15 – Regulatory Information

15.1. EPCRA - Emergency Planning and Community Right-to-Know

SARA 311/312 Hazards : Acute Health Hazard Fire Hazard
SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

The ingredients of this product are reported in the following inventories:
TSCA : On TSCA Inventory
DSL : All components of this product are on the Canadian DSL
AICS : On the inventory, or in compliance with the inventory
ENCS : On the inventory, or in compliance with the inventory
ISHL : On the inventory, or in compliance with the inventory
KECI : On the inventory, or in compliance with the inventory
PICCS : On the inventory, or in compliance with the inventory
IECSC : On the inventory, or in compliance with the inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

Section 16 : Additional Information

16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):
• This MSDS complies with ISO 11014; the requirements of UN-GHS

Revision No	Revision content
05	• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets. • This SDS is updated in line with Eti Maden Corporate identity.

16.2. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List
16.3. List of relevant hazard statements and precautionary statements used in this MSDS
Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
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P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste dis- posal plant.

16.4. References

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2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
9. Hansveit and Oldersma, 2000; TNO Nutrition and Food Research Institute. Report No. V99.157.
10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.

For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.5. Disclaimer of Liability

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This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.