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**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifiers**

Product name : Ethyl alcohol, Pure

Product Number : 459844

Brand : Sigma-Aldrich

**1.2 Other means of identification**

Absolute alcohol

**1.3 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

**1.4 Details of the supplier of the safety data sheet**Company : Sigma-Aldrich Pty. Ltd.  
12 Anella Avenue  
CASTLE HILL NSW 2154  
AUSTRALIA

Telephone : +61 2 9841 0555 (1800 800 097)

Fax : +61 2 9841 0500 (1800 800 096)

**1.5 Emergency telephone number**Emergency Phone # : Free call (24/7): 1800 448 465  
Int'l (24/7): +61 2 9037 2994 (CHEMTREC)

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**2. HAZARDS IDENTIFICATION****2.1 GHS Classification**

Flammable liquids (Category 2)

Serious eye damage/eye irritation (Category 2)

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

Hazard statement(s)

H225

Highly flammable liquid and vapour.

H319

Causes serious eye irritation.

Precautionary statement(s)

Prevention

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233

Keep container tightly closed.

P240

Ground/bond container and receiving equipment.

P241 P280	Use explosion-proof electrical/ ventilating/ lighting/ equipment. Wear protective gloves/ eye protection/ face protection.
Response P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P337 + P313 P370 + P378	If eye irritation persists: Get medical advice/ attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage P403 + P235	Store in a well-ventilated place. Keep cool.
Disposal P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Other hazards - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms	:	Absolute alcohol
Formula	:	C <sub>2</sub> H <sub>6</sub> O
Molecular weight	:	46.07 g/mol
CAS-No.	:	64-17-5
EC-No.	:	200-578-6
Index-No.	:	603-002-00-5
Registration number	:	01-2119457610-43-XXXX

Component	Classification	Concentration
<b>Ethanol</b>		
	Flam. Liq. 2; 2A; H225, H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

No data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hygroscopic.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.3 no other specific.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Occupational Exposure Limits



b) Odour	No data available
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: -114 °C - lit.
f) Initial boiling point and boiling range	78.3 °C
g) Flash point	14.0 °C - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 19 %(V) Lower explosion limit: 3.3 %(V)
k) Vapour pressure	59.5 hPa at 20.0 °C
l) Vapour density	No data available
m) Relative density	0.789 g/mL at 20 °C 0.789 g/mL at 25 °C
n) Water solubility	completely soluble
o) Partition coefficient: n-octanol/water	log Pow: -0.349 at 24 °C
p) Auto-ignition temperature	363.0 °C
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Alkali metals, Oxidizing agents, Peroxides

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 10,470 mg/kg  
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 124.7 mg/l  
(OECD Test Guideline 403)

LC50 Inhalation - Rat - 4 h - 30,000 mg/l

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation  
(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation.  
(OECD Test Guideline 405)

#### Respiratory or skin sensitisation

Sensitisation test:

Result: negative

Remarks: (IUCLID)

#### Germ cell mutagenicity

Ames test

Salmonella typhimurium

Result: negative

In vitro mammalian cell gene mutation test

Mouse lymphoma test

Result: negative

OECD Test Guideline 478

Mouse - male

#### Carcinogenicity

Carcinogenicity - Mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

Reproductive toxicity - Human - female - Oral

Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects.

Effects on Newborn: Drug dependence.

#### Specific target organ toxicity - single exposure

#### Specific target organ toxicity - repeated exposure

#### Aspiration hazard

No data available

#### Additional Information

RTECS: KQ6300000

irritant effects, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to fish flow-through test LC50 - Pimephales promelas (fathead minnow) - 15.3 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates LC50 - Ceriodaphnia dubia (water flea) - 5,012 mg/l - 48 h

NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d

Toxicity to algae EC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h (OECD Test Guideline 201)

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 15 d  
Result: 95 % - Readily biodegradable.  
(OECD Test Guideline 301E)

### 12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

No data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### 14.1 UN number

ADR/RID: 1170

IMDG: 1170

IATA-DGR: 1170

### 14.2 UN proper shipping name

ADR/RID: ETHANOL

IMDG: ETHANOL

IATA-DGR: Ethanol

### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA-DGR: 3

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA-DGR: II

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

#### 14.6 Special precautions for user

No data available

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### 15. REGULATORY INFORMATION

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

##### Standard for the Uniform Scheduling of Medicines and Poisons

No data available

##### Carcinogen classification under WHS Regulation 2011, Schedule 10

Not listed

##### Notification status

<b>AICS:</b>	On the inventory, or in compliance with the inventory
<b>DSL:</b>	All components of this product are on the Canadian DSL
<b>ENCS:</b>	On the inventory, or in compliance with the inventory
<b>IECSC:</b>	On the inventory, or in compliance with the inventory
<b>ISHL:</b>	On the inventory, or in compliance with the inventory
<b>KECI:</b>	On the inventory, or in compliance with the inventory
<b>NZIoC:</b>	On the inventory, or in compliance with the inventory
<b>PICCS:</b>	On the inventory, or in compliance with the inventory

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### 16. OTHER INFORMATION

#### Full text of H-Statements referred to under sections 2 and 3.

	Serious eye damage/eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

#### Further information

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