

SAFETY DATA SHEET

according to EC directive 2001/58/EC
Version 3.0 Revision Date 14.05.2007
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : **Ethanol**

Product Number : 32221
Brand : Riedel

Company : Sigma-Aldrich Company Ltd.
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Ethyl alcohol

Formula : C₂H₆O
Molecular Weight : 46.07 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration [%]
Ethanol				
64-17-5	200-578-6	603-002-00-5	F, R11	-

3. HAZARDS IDENTIFICATION

Risk advice to man and the environment
Highly flammable.

4. 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

Flush eyes with water as a precaution.

If swallowed

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

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid breathing vapors, 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.

Environmental precautions

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

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Ethanol	64-17-5	TWA	1,000 ppm 1,920 mg/m ³	1997-01-01	UK. Health and Safety Commission, EH 40/2005, Workplace exposure limits
Remarks	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used				

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form liquid, clear
Colour colourless

Safety data

pH no data available
Melting point -144.0 °C
Boiling point 78.0 - 80.0 °C
Flash point 14.0 °C - closed cup
Ignition temperature 363 °C
Lower explosion limit 3.3 %(V)
Upper explosion limit 19 %(V)
Vapour pressure 59.5 hPa at 20.0 °C
Density 0.79 g/cm³
Water solubility completely soluble

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Alkali metals, Ammonia, Oxidizing agents, Peroxides

Hazardous decomposition products**Hazardous decomposition products formed under fire conditions.**

None known.

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 7,060 mg/kg
Remarks: Lungs, Thorax, or Respiration:Other changes.

LC50 Inhalation - rat - 10 h - 20000 ppm

Irritation and corrosion

Skin - rabbit - Skin irritation - 24 h

Eyes - rabbit - Mild eye irritation - 24 h

Sensitization

no data available

Chronic exposure

Carcinogenicity - mouse - Oral

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

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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.

Signs and Symptoms of Exposure

Central nervous system depression, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.
Target Organs	Nerves., Liver, Heart,

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 13,000.00 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 10,400.00 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 15,300.00 mg/l - 96 h
	LC50 - other fish - 10,000.00 mg/l - 24 h

Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 9.30 mg/l - 48 h
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Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

ADR/RID

UN-No.: 1170 Class: 3 Packing group: II
Proper shipping name: ETHANOL

IMDG

UN-No.: 1170 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ETHANOL
Marine pollutant: No

IATA

UN-No.: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol

15. REGULATORY INFORMATION

Labelling according to EC Directives

EC Label

Hazard symbols

F Highly flammable

R-phrases(s)

R11 Highly flammable.

S-phrases(s)

S 7 Keep container tightly closed.

S16 Keep away from sources of ignition - No smoking.

16. OTHER INFORMATION

Further information

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