

## SAFETY DATA SHEET

according to EC directive 2001/58/EC  
Version 3.0 Revision Date 12.05.2007  
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### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : **Acetic acid**

Product Number : 27225  
Brand : Riedel

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

Formula : C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>  
Molecular Weight : 60.05 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration [%]
<b>Acetic acid</b>				
64-19-7	200-580-7	607-002-00-6	C, R10- R35	-

### 3. HAZARDS IDENTIFICATION

**Risk advice to man and the environment**  
Flammable. Causes severe burns.

### 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

Take off contaminated clothing and shoes immediately. 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.

## 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

Use personal protective equipment. 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

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). Keep in suitable, closed containers for disposal.

## 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
Acetic acid	64-19-7	TWA	10 ppm 25 mg/m <sup>3</sup>	1991-07-01	EU. Commission Directive 91/322/EEC of 29 May 1991, Official Journal L 177, 5.7.1991 p. 22 - 24.

### 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
Colour	colourless

**Safety data**

pH	2.4 at 60.05000 g/l
Melting point	16.2 °C
Boiling point	117.0 - 118.0 °C
Flash point	40.0 °C - closed cup
Ignition temperature	485 °C
Lower explosion limit	4 %(V)
Upper explosion limit	19.9 %(V)
Vapour pressure	73.3 hPa at 50.0 °C 15.2 hPa at 20.0 °C
Density	1.05 g/cm <sup>3</sup>
Water solubility	completely miscible
Partition coefficient (n-octanol/water)	log Pow: -0.17

**10. STABILITY AND REACTIVITY****Storage stability**

Stable under recommended storage conditions.

**Conditions to avoid**

Heat, flames and sparks.

**Materials to avoid**

Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, e.g. potassium permanganate, Amines, Alcohols

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

Carbon oxides

**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

LD50 Oral - rat - 3,310 mg/kg

LC50 Inhalation - mouse - 1 h - 5620 ppm

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Blood:Other changes.

LD50 Dermal - rabbit - 1,112 mg/kg

#### **Irritation and corrosion**

Skin - rabbit - Mild skin irritation - 24 h

#### **Sensitization**

no data available

#### **Chronic exposure**

no data available

#### **Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **Potential Health Effects**

<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Skin</b>	May be harmful if absorbed through skin. Causes severe skin burns.
<b>Eyes</b>	Causes severe eye burns.
<b>Ingestion</b>	May be harmful if swallowed. Causes severe burns.
<b>Target Organs</b>	Teeth., Kidney,

## **12. ECOLOGICAL INFORMATION**

#### **Elimination information (persistence and degradability)**

no data available

#### **Ecotoxicity effects**

Toxicity to fish	LC50 - Leuciscus idus (Golden orfe) - 410.00 mg/l - 48 h LC50 - Cyprinus carpio (Carp) - 49.00 mg/l - 48 h LC50 - Pimephales promelas (fathead minnow) - 79.00 - 88.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 65.00 mg/l - 48 h
Toxicity to algae	EC50 - No information available. - 156.00 mg/l - 24 h

#### **Further information on ecology**

no data available

### 13. DISPOSAL CONSIDERATIONS

#### Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. 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.: 2789      Class: 8 (3)      Packing group: II  
Proper shipping name: ACETIC ACID, GLACIAL

#### IMDG

UN-No.: 2789      Class: 8 (3)      Packing group: II      EMS-No: F-E, S-C  
Proper shipping name: ACETIC ACID, GLACIAL  
Marine pollutant: No

#### IATA

UN-No.: 2789      Class: 8 (3)      Packing group: II  
Proper shipping name: Acetic acid, glacial

### 15. REGULATORY INFORMATION

#### Labelling according to EC Directives

EC Label

Hazard symbols

C      Corrosive

R-phrases(s)

R10      Flammable.  
R35      Causes severe burns.

S-phrases(s)

S23      Do not breathe gas/fumes/vapour/spray.  
S26      In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S45      In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### 16. OTHER INFORMATION

#### Further information

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