

## SAFETY DATA SHEET

according to EC directive 2001/58/EC  
Version 3.0 Revision Date 23.03.2007  
Print Date 20.02.2008

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : **Acetonitrile**

Product Number : 34851  
Brand : Sigma-Aldrich

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

Formula : C<sub>2</sub>H<sub>3</sub>N  
Molecular Weight : 41.05 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration [%]
<b>Acetonitrile</b>				
75-05-8	200-835-2	608-001-00-3	F, Xn, R11- R20/21/22- R36	-

### 3. HAZARDS IDENTIFICATION

#### Risk advice to man and the environment

Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.

### 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

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

Carbon dioxide (CO<sub>2</sub>) 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

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 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.

### 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
Acetonitrile	75-05-8	TWA	40 ppm 70 mg/m <sup>3</sup>	2006-02-01	EU. Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC Text with EEA relevance
		STEL	60 ppm 102 mg/m <sup>3</sup>	1997-01-01	UK. Health and Safety Commission, EH 40/2005, Workplace exposure limits
		TWA	40 ppm	1997-01-01	UK. Health and Safety

68 mg/m<sup>3</sup>Commission, EH 40/2005,  
Workplace exposure limits**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**

impervious clothing, 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
Odour	pungent

**Safety data**

pH	no data available
Melting point	-48.0 °C
Boiling point	81.0 - 82.0 °C
Flash point	2.0 °C - closed cup
Ignition temperature	523 °C
Lower explosion limit	4.4 %(V)
Upper explosion limit	16 %(V)
Vapour pressure	97.1 hPa at 20.0 °C
Density	0.78 g/cm <sup>3</sup>
Water solubility	soluble
Partition coefficient (n-octanol/water)	log Pow: -0.34

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

Stable under recommended storage conditions.

**Conditions to avoid**

Heat, flames and sparks.

**Materials to avoid**

acids, Bases, Oxidizing agents, Reducing agents, Alkali metals

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

Carbon oxides, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

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

LD50 Oral - rat - 2,460 mg/kg

LC50 Inhalation - rat - 8 h - 7551 ppm

Remarks: Behavioral: Altered sleep time (including change in righting reflex). Behavioral: Convulsions or effect on seizure threshold. Blood: Hemorrhage.

LD50 Dermal - rabbit - 2,000 mg/kg

**Irritation and corrosion**

Skin - rabbit - Mild skin irritation

Eyes - rabbit - Severe eye irritation

**Sensitization**

Remarks: no data available

**Chronic exposure**

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

**Signs and Symptoms of Exposure**

Treat as cyanide poisoning., Always have on hand a cyanide first-aid kit, together with proper instructions., The onset of symptoms is generally delayed pending conversion to cyanide., Nausea, Vomiting, Diarrhoea, Headache, Dizziness, Rash, Cyanosis, excitement, depression, Drowsiness, impaired judgment, Lack of coordination, stupor, death

**Potential Health Effects**

<b>Inhalation</b>	Harmful if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	Harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	Causes eye irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Target Organs</b>	Lungs, Blood, Kidney, Liver, Central nervous system,

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

Biodegradability      Remarks: no data available

**Ecotoxicity effects**

Toxicity to fish      LC50 - Pimephales promelas (fathead minnow) - 1,640.00 mg/l - 96 h

Toxicity to daphnia      EC50 - Daphnia magna (Water flea) - 3,600.00 mg/l - 48 h

and other aquatic  
invertebrates.

NOEC - Daphnia magna (Water flea) - 640 mg/l - 14 d

**Further information on ecology**

no data available

**13. DISPOSAL CONSIDERATIONS****Product**

Contact a licensed professional waste disposal service to dispose of this material. 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.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****ADR/RID**

UN-No.: 1648      Class: 3      Packing group: II  
Proper shipping name: ACETONITRILE

**IMDG**

UN-No.: 1648      Class: 3      Packing group: II      EMS-No: F-E, S-D  
Proper shipping name: ACETONITRILE  
Marine pollutant: No

**IATA**

UN-No.: 1648      Class: 3      Packing group: II  
Proper shipping name: Acetonitrile

**15. REGULATORY INFORMATION****Labelling according to EC Directives**

EC Label

Hazard symbols

F	Highly flammable
Xn	Harmful

R-phrases(s)

R11	Highly flammable.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R36	Irritating to eyes.

S-phrases(s)

S16	Keep away from sources of ignition - No smoking.
S36/37	Wear suitable protective clothing and gloves.

**16. OTHER INFORMATION****Further information**

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