

4/25/08

**SIGMA-ALDRICH**

**Material Safety Data Sheet**

Version 3.2  
Revision Date 01/11/2008  
Print Date 03/20/2008

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Acetonitrile  
Product Number : 271004  
Brand : Aldrich  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # : (314) 776-6555

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C2H3N  
Molecular Weight : 41.05 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Acetonitrile			
75-05-8	200-835-2	608-001-00-3	-

**3. HAZARDS IDENTIFICATION**

**Emergency Overview**

**OSHA Hazards**

Flammable Liquid  
Target Organ Effect  
Harmful by ingestion.  
Harmful by skin absorption.  
Irritant

**Target Organs**

Lungs, Blood, Kidney, Liver, Central nervous system

**HMIS Classification**

Health Hazard: 2  
Chronic Health Hazard: \*  
Flammability: 3  
Physical hazards: 0

**NFPA Rating**

Health Hazard: 2  
Fire : 3  
Reactivity Hazard: 0

Health Hazard: 2  
Fire : 3  
Reactivity Hazard: 0  
**Potential Health Effects**

**Inhalation** : May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** : Harmful if absorbed through skin. May cause skin irritation.  
**Eyes** : May cause eye irritation.  
**Ingestion** : Harmful if swallowed.

**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**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**

**Flammable properties**

Flash point : 2.0 °C (35.6 °F) - closed cup

Ignition temperature : 523 °C (973 °F)

**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**

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**

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**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**

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. Store in cool place.

Handle and store under inert gas.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Acetonitrile	75-05-8	TWA	20 ppm	2002-01-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs ) and Biological Exposure Indices (BEIs)
Remarks	2002 Adoption. Refers to Appendix A -- Carcinogens.				
		TWA	40 ppm 70 mg/m <sup>3</sup>	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		STEL	60 ppm 105 mg/m <sup>3</sup>	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	40 ppm 70 mg/m <sup>3</sup>	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

**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.

**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  
Odour pungent

**Safety data**

pH no data available  
Melting point -48.0 °C (-54.4 °F)  
Boiling point 81.0 - 82.0 °C (177.8 - 179.6 °F)  
Flash point 2.0 °C (35.6 °F) - closed cup  
Ignition temperature 523 °C (973 °F)  
Lower explosion limit 4.4 %(V)  
Upper explosion limit 16 %(V)  
Vapour pressure 97.1 hPa (72.8 mmHg) at 20.0 °C (68.0 °F)  
Density 0.78 g/cm<sup>3</sup>  
Water solubility soluble  
Partition coefficient: log Pow: -0.34  
n-octanol/water

**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)

**Hazardous reactions**

Vapours may form explosive mixture with air.

**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

#### Sensitisation

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.

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### 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>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	Harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause 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)

no data available

#### Ecotoxicity effects

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

Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - 3,600.00 mg/l - 48 h

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

#### 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

#### DOT (US)

UN-Number: 1648 Class: 3 Packing group: II  
Proper shipping name: Acetonitrile

#### IMDG

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

#### IATA

UN-Number: 1648 Class: 3 Packing group: II  
Proper shipping name: Acetonitrile

## 15. REGULATORY INFORMATION

#### OSHA Hazards

Flammable Liquid, Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Irritant

#### TSCA Status

On TSCA Inventory

#### DSL Status

All components of this product are on the Canadian DSL list.

#### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

Acetonitrile	CAS-No. 75-05-8	Revision Date 1987-01-01
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#### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

Acetonitrile	CAS-No. 75-05-8	Revision Date 1987-01-01
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#### Pennsylvania Right To Know Components

Acetonitrile	CAS-No. 75-05-8	Revision Date 1987-01-01
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#### New Jersey Right To Know Components

Acetonitrile	CAS-No. 75-05-8	Revision Date 1987-01-01
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#### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

**16. OTHER INFORMATION**

**Further information**

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