1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Acetonitrile
Product Number: 271004
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
3650 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5652
Emergency Phone #: (314) 776-6555

2. 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
GHS Label elements, including precautionary statements
Pictogram
Signal word: Danger
Hazard statement(s)
H225: Highly flammable liquid and vapour.
H302 + H312: Harmful if swallowed or if in contact with skin.
H315: Causes skin irritation.
H318: Causes serious eye damage.
H332: Harmful if inhaled.
Precautionary statement(s)
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260: Wear protective gloves/eye protection/face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Methyl cyanide
CAS No: 75-05-8
EC No: 200-635-2
Index No: 508-001-00-3

4. FIRST AID MEASURES

General advice
Move out of dangerous area. 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.
If in contact with skin
Wash off with soap and plenty of water. Consult a physician.
If 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
Prevent further leakage or spillage if safe to do so. Do not apply product enter drains.
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 and container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

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

Conditions for safe 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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>75-05-8</td>
<td>TWA 20 ppm</td>
<td>2007-01-01</td>
<td>USA, ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td>Felt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td>Lower Respiratory Tract irritation Not considered a human carcinogen. Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Danger of cutaneous absorption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| | TWA | STEL | | | |
|-----------------|-----|------|-----|---|
| | 40 ppm | 60 ppm | 70 ppm | 105 ppm |
| mg/m3 | mg/m3 | mg/m3 | mg/m3 |
| 1989-01-19 | 1993-01-19 | 1997-08-04 |
| USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 | USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 | USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| The value in mg/m3 is approximate. |

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. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Tightly fitting safety goggles. Facesheet (minimum 6 mm) or equivalent. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection
Complete skin protecting against chemicals. Flame retardant anti-static protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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 |
| Melt point | -48 °C (-54 °F) |
| Boiling point | 81 - 82 °C (178 - 180 °F) |
| Flash point | 2.0 °C (35.6 °F) - closed cup |
| Ignition temperature | 533 °C (993 °F) |
| Lower explosion limit | 4.4 % (V) |
| Upper explosion limit | 16 % (V) |
| Vapour pressure | 91.1 hPa (72.8 mmHg) at 20.0 °C (68.0 °F) |
| Density | 0.768 g/ml, at 25 °C (77 °F) |
| Water solubility | soluble |
| Partition coefficient | log Pow: -0.34 |

10. STABILITY AND REACTIVITY
Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

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
Skin corrosion/irritation
Skin - rabbit - Mild skin irritation
Serious eye damage/eye irritation
Eyes - rabbit - Severe eye irritation
Respiratory or skin sensitization
Did not cause sensitisation on laboratory animals.
Germ cell mutagenicity
no data available
Carcinogenicity
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.
14. TRANSPORT INFORMATION

DCT (US)
- UN-Number: 1648
- Class: 3
- Packing group: II
- Proper shipping name: Acetonitrile
- Reportable Quantity (ROQ): 5,000 lbs
- Marine pollutant: No
- Poison Inhalation Hazard: No

IMDG
- UN-Number: 1648
- Class: 3
- Packing group: II
- 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, Iritant

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

16. OTHER INFORMATION

Further Information
- Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.
- The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip or additional terms and conditions of sale.