MATERIAL SAFETY DATA SHEET PAGE 1

SECTION 1. -- -- -- -- -- -- CHEMICAL IDENTIFICATION -- -- -- -- -- --
PRODUCT #: 36045-7 NAME: ACETONITRILE, 99.5%, A.C.S. REAGENT

SECTION 2. -- -- -- -- COMPOSITION/INFORMATION ON INGREDIENTS -- -- -- --
CAS #: 75-05-8 MF: C2H3N
SYNONYMS
ACETONITRIL (GERMAN, DUTCH) * ACETONITRILE (AC61H, DOT-OSHA) *
CYANOMETHANE * CYANURE DE MÉTHYL (FRENCH) * ETHANENITRILE * ETHYL
NITRITE * METHANECARBONITRILE * METHANE, CYANO- * METHYL CYANIDE *
METHYL CYANIDE (DOT) * METHYLCYANID (CZECH) * NCI-C60822 * RCRA WASTE
NUMBER U003 * UN1648 (DOT) * USAF EK-488 *

SECTION 3. -- -- -- -- -- -- HAZARDS IDENTIFICATION -- -- -- -- --
LABEL PRECAUTIONARY STATEMENTS
FLAMMABLE (USA DEFINITION)
HIGHLY FLAMMABLE (EUROPEAN DEFINITION)
TOXIC
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
CENTRAL NERVOUS SYSTEM
LIVER
KEEP AWAY FROM SOURCES OF IGNITION. NO SMOKING.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
HANDLE AND STORE UNDER NITROGEN.

SECTION 4. -- -- -- -- FIRST-AID MEASURES -- -- -- --
FLUSH SKIN WITH WATER.
CONTAMINATION OF THE EYES SHOULD BE TREATED BY IMMEDIATE AND PROLONGED
IRRIGATION WITH copious AMOUNTS OF WATER.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: 360457
NAME: ACETONITRILE, 99.5%, A.C.S. REAGENT
MF: C2H3N

CUST#: 523216
PO#: 0 F 06524

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.
REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY. DISCARD CONTAMINATED SHOES.

SECTION 5. FIRE FIGHTING MEASURES
EXTINGUISHING MEDIA CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
WATER MAY BE EFFECTIVE FOR COOLING, BUT MAY NOT EFFECT EXTINGUISHMENT.
SPECIAL FIREFIGHTING PROCEDURES WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
UNUSUAL FIRE AND EXPLOSION HAZARDS EXTREMELY FLAMMABLE VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND FLASH BACK. CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS. EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. ACCIDENTAL RELEASE MEASURES
EVACUATE AREA. SHUT OFF ALL SOURCES OF IGNITION. WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
COVER WITH AN ACTIVATED CARBON ADSORBENT, TAKE UP AND PLACE IN CLOSED CONTAINERS. TRANSPORT OUTDOORS. VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. HANDLING AND STORAGE
REFER TO SECTION 8.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY googleS, OTHER PROTECTIVE CLOTHING.

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: 360457  NAME: ACETONITRILE, 99.5%, A.C.S. REAGENT
MF: C2H3N

SAFETY SHOWER AND EYE BATH. USE ONLY IN A CHEMICAL FUME HOOD. DO NOT BREATHE VAPORS. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE. WASH THOROUGHLY AFTER HANDLING. TOXIC. IRRITANT. KEEP TIGHTLY CLOSED. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME. STORE IN A COOL DRY PLACE.

SECTION 9. — — — — — — PHYSICAL AND CHEMICAL PROPERTIES — — — — — —


SECTION 10. — — — — — — — — STABILITY AND REACTIVITY — — — — — — — —

INCOMPATIBILITIES: ACIDS, BASES, OXIDIZING AGENTS, REDUCING AGENTS, ALKALI METALS. HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION MAY PRODUCE CARBON MONOXIDE, CARBON DIOXIDE, AND NITROGEN OXIDES. HYDROGEN CYANIDE.

CONTINUED ON NEXT PAGE
SECTION 11. --- --- --- --- TOXICOLOGICAL INFORMATION --- --- --- ---

ACUTE EFFECTS
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
CAUSES SKIN IRRITATION.
TARGET ORGAN(S):
CENTRAL NERVOUS SYSTEM
LIVER, KIDNEYS
BLOOD, LUNGS

RTECS NO: AL7700000
ACETONITRILE

IRRITATION DATA
SKN-RAT 10 MG/24H OPEN
SKN-RAT 500 MG OPEN 1 LD
EYE-RAT 20 MG OPEN 2 EV

TOXICITY DATA
ORL-RAT LD50: 2600 MG/KG
IHL-RAT LC50: 75510 PPM/8H
IPR-RAT LD50: 350 MG/KG
SCU-RAT LD50: 3500 MG/KG
IVN-RAT LD50: 1600 MG/KG
PAR-RAT LD50: 1100 MG/KG
ORL-MUS LD50: 260 MG/KG
IHL-MUS LC50: 2623 PPM/24H
IPR-MUS LD50: 175 MG/KG
SCU-MUS LD50: 1440 MG/KG
IVN-MUS LC50: 612 MG/KG
ORL-MUS LD50: 50 MG/KG
IHL-RAT LC50: 2828 PPM/4H
SKN-RAT LD50: 1250 UL/KG
ORL-SPG LD50: 177 MG/KG
IHL-SPG LC50: 5655 PPM/4H
ORL-NAM LD50: 1570 MG/KG

TARGET ORGAN DATA
SENSE ORGANS AND SPECIAL SENSES (CORNEAL DAMAGE)
CONTINUED ON NEXT PAGE
Material Safety Data Sheet

Product #: 360457  Name: Acetonitrile, 99.5%, A.C.S. Reagent

Material (Hallucinations, Distorted Perceptions)
Behavioral (Convulsions or Effect on Seizure Threshold)
Behavioral (Excitement)
Behavioral (Ataxia)
Lungs, Thorax or Respiration (Dyspnea)
Lungs, Thorax or Respiration (Other Changes)
Gastrointestinal (Nausea or Vomiting)
Effects on Fertility (Post-implantation Mortality)
Specific Developmental Abnormalities (Musculoskeletal System)
Nutritional and Gross Metabolic (Changes in: Metabolic Acidosis)
Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12. Ecological Information

Data not yet available.

Section 13. Disposal Considerations

Burn in a chemical incinerator equipped with an afterburner and scrubber but extra care in igniting as this material is highly flammable.
Observe local, state and local environmental regulations.

Section 14. Transport Information

Contact Aldrich Chemical Company for transportation information.

Section 15. Regulatory Information

Reviews, Standards, and Regulations
ACGIH TLV-TWA 40 ppm; STEL 60 ppm
NIOSH Standard AIR 2 TWA 40 ppm (70 mg/m^3)
DTLV 3.37
OSHA PEL 8H-TWA 40 ppm (70 mg/m^3)
FEL 54, 923, 89
OSHA PEL Final 49 H-TWA 40 ppm (70 mg/m^3); STEL 60 ppm (105 mg/m^3)
FEL 54, 923, 89

Continued on next page.
<table>
<thead>
<tr>
<th>CUST#:</th>
<th>523216</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO#:</td>
<td>0 F 06524</td>
</tr>
</tbody>
</table>

**PRODUCT #:** 360457

**NAME:** ACETONITRILE, 99.5%, A.C.S. REAGENT

**MF #:** C2H3N

| EGYPT: TWA 40 PPM (70 MG/M3); SKIN JAN93 |
|---|---|
| AFGHANISTAN: TWA 40 PPM (70 MG/M3); SKIN JAN93 |
| ALGERIA: TWA 40 PPM (70 MG/M3); SKIN JAN93 |
| AUSTRIA: TWA 40 PPM (70 MG/M3); STEL 60 PPM; SKIN JAN93 |
| BELGIUM: TWA 40 PPM (70 MG/M3); STEL 60 PPM (101 MG/M3); SKIN JAN93 |
| DENMARK: TWA 40 PPM (70 MG/M3); STEL 60 PPM (105 MG/M3) |
| FINLAND: TWA 40 PPM (70 MG/M3); STEL 60 PPM |
| FRANCE: TWA 40 PPM (70 MG/M3); STEL 60 PPM |
| GERMANY: TWA 40 PPM (70 MG/M3); STEL 60 PPM |
| HUNGARY: TWA 50 MG/M3; STEL 100 MG/M3; SKIN JAN93 |
| THE NETHERLANDS: TWA 40 PPM (70 MG/M3) |
| THE PHILIPPINES: TWA 40 PPM (70 MG/M3) |
| RUSSIA: STEL 10 MG/M3 |
| SWITZERLAND: TWA 40 PPM (70 MG/M3); STEL 80 PPM; SKIN JAN93 |
| TURKEY: TWA 40 PPM (70 MG/M3) |
| UNITED KINGDOM: TWA 40 PPM (70 MG/M3); STEL 60 PPM |
| IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV |
| IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV |
| NIOSH REL TO ACETONITRILE-AIR: 100 mg/m³ |
| NIOSH# DHHS #92-100.92 |
| NOHS 1974: HZD 029001; NIS 9; TNE 3021; NOS 25; TNE 28201 |
| NOES 1973: HZD 029001; NIS 19; TNE 1172; NOS 27; TNE 31341; TFE 7975 |
| EPA TSCA CHEMICAL INVENTORY, JUNE 1993 |
| EPA TSCA Section 8(a) PRELIMINARY ASSESSMENT INFORMATION, FINAL RULE |
| FEREC 472699282 |
| EPA TSCA SECTION 8(E) STATUS REPORT BEHQ-0578-0149 |
| DATA BASE, JULY 1994 |
| NTCP ANALYTICAL METHODS: SEE ACETONITRILE, 1006 |
| NTP CARCINOGENESIS STUDIES: TEST COMPLETED (POST-PEER REVIEW), JULY 1994 |

**SECTION 16: OTHER INFORMATION**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Aldrich 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 for additional terms and conditions of sale.

**CONTINUED ON NEXT PAGE**
PRODUCT #: 360457  NAME: ACETONITRILE, 99.5%, A.C.S. REAGENT
MF: C2H3N

COPYRIGHT 1994 ALDRICH CHEMICAL CO., INC. LICENSE GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

---

Holland
Aldrich-Chemie  B.V.
P.O. Box 37
3500 AH Leiden
The Netherlands
Telephone: (010) 283-3900
Fax: (010) 283-3919

Spain
Aldrich Quimica  S.A.
Dra. Mary Ellen 8
28003 Madrid
Spain
Telephone: (34) 91-747-2000
Fax: (34) 91-747-2020

Italy
Aldrich-Chemie  S.p.A.
Via G. Amendola 154
20161 Milano
Italy
Telephone: (39) 2-34110
Fax: (39) 2-34110

Switzerland
Aldrich-Chemie  AG
Industriestrasse 25
CH-4002 Basel
Switzerland
Telephone: (41) 61-318-4111
Fax: (41) 61-318-4111

Australia
Aldrich-Chemie  Pty. Ltd.
Unit 1 68 Annette Avenue
North Ryde, NSW 2113
Australia
Telephone: (61) 2-9847-2000
Fax: (61) 2-9847-2000

Belgium
Aldrich-Chemie  Belgium  S.A.
K. Cartierlaan 9
1350 Kortrijk
Belgium
Telephone: (32) 56-38-58-00
Fax: (32) 56-38-58-00

Czech Republic
Aldrich-Chemie  Bohemia  a.s.
Pr. Na Pernici 13
150 00 Praha 5
Czech Republic
Telephone: (42) 222-222-222
Fax: (42) 222-222-222

Brazil
Aldrich do Brasil Ltda.
Av. Monteiro Lobato 1050
01291-000 São Paulo
Brazil
Telephone: (55) 11-222-2222
Fax: (55) 11-222-2222

India
Aldrich-India  Ltd.
Vidhia Nath Marg
New Delhi 110 071
India
Telephone: (91) 11-2345-6789
Fax: (91) 11-2345-6789

Germany
Aldrich-Chemie GmbH  & Co. KG
Hochschulstraße 2  D-41456 Krefeld
Germany
Telephone: (49) 2151-123456
Fax: (49) 2151-123456