Material Safety Data Sheet
Acetonitrile, anhydrous, 99.9%

ACC# 90804

Section 1 - Chemical Product and Company Identification

MSDS Name: Acetonitrile, anhydrous, 99.9%
Catalog Numbers: AC610220000, AC610220010, AC610221000, AC610500000, AC610500190, AC610500500 AC610500500, AC610501150, AC610502000, AC610700000, AC610700190, AC610700500 AC610700500, AC610701150, AC610702000, AC610961000
Synonyms: Cyanomethane; Ethanenitrile; Ethyl nitrile; Methyl cyanide.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
75-05-8	Acetonitrile	99.9	200-835-2

Hazard Symbols: XN F
Risk Phrases: 11 20/21/22 36

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 6 deg C. **Warning!** May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects. Lachrymator (substance which increases the flow of tears). Hygroscopic (absorbs moisture from the air). Metabolized to cyanide in the body, which may cause headache, dizziness, weakness, unconsciousness, convulsions, coma and possible death. **Flammable liquid and vapor.** Harmful if swallowed or absorbed through the skin. Causes eye irritation. May cause skin and respiratory tract irritation. May be harmful if inhaled.
Target Organs: Blood, kidneys, central nervous system, liver, lungs.

Potential Health Effects

Eye: Causes eye irritation. Lachrymator (substance which increases the flow of tears). May produce superficial reversible injury.
Skin: Causes mild skin irritation. Harmful if absorbed through the skin. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure. May cause tissue anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis (bluish skin due to deficient oxygenation of the blood), weak and irregular heart beat, collapse, unconsciousness, convulsions, coma and death. May cause central nervous system depression. Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness and possible death.
Inhalation: Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. Causes upper respiratory tract irritation. May be metabolized to cyanide which in turns act by inhibiting cytochrome oxidase impairing cellular respiration. May cause tissue anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), weak and irregular heart beat, collapse, unconsciousness, convulsions, coma and death.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause liver and kidney damage. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen. Laboratory experiments have resulted in mutagenic effects. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation of the upper respiratory tract and eyes.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.
Notes to Physician: Exposure should be treated as a cyanide poisoning. Effects may be delayed. For methemoglobinemia, administer oxygen alone or with Methylene blue depending on the methemoglobinemia concentration in the blood. May be partially metabolized to cyanide in the body.
Antidote: Always have a cyanide antidote kit on hand when working with cyanide compounds. Get medical advice to use. Methylene blue, alone or in combination with oxygen is indicated as a treatment in nitrite induced methemoglobinemia.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Flammable liquid and vapor. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: 6 deg C (42.80 deg F)
Autoignition Temperature: 524 deg C (975.20 deg F)
Explosion Limits, Lower:4.4 vol %
Upper: 16.00 vol %
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Acetonitrile	20 ppm TWA; skin - potential for cutaneous absorption	20 ppm TWA; 34 mg/m3 TWA 500 ppm IDLH	40 ppm TWA; 70 mg/m3 TWA

OSHA Vacated PELs: Acetonitrile: 40 ppm TWA; 70 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: sweetish odor - ethereal odor
pH: Not available.
Vapor Pressure: 73 mm Hg
Vapor Density: 1.42 (Air=1)
Evaporation Rate:5.79 (Butyl acetate=1)
Viscosity: 0.36 cP 20 deg C
Boiling Point: 82 deg C @ 760.00mm Hg
Freezing/Melting Point:-50 deg C
Decomposition Temperature:> 500 deg C
Solubility: Miscible.
Specific Gravity/Density:.7810g/cm3
Molecular Formula:C2H3N
Molecular Weight:41.04

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat, exposure to moist air or water, oxidizers.
Incompatibilities with Other Materials: Oxidizing agents, reducing agents, acids, bases, alkali metals, fluorine, nitric acid, perchlorates, sulfuric acid, chlorosulfonic acid, oleum, dinitrogen tetraoxide, sulfites, indium, moisture, Attacks some forms of plastics, rubbers, and coatings., nitrating agents, N-fluoro compounds (e.g. perfluorourea + acetonitrile), lanthanide perchlorates, iron (III) perchlorate, 2-Cyano-2-propyl nitrate, trichlorosilane, diphenyl sulfoxide.
Hazardous Decomposition Products: Hydrogen cyanide, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 75-05-8: AL7700000
LD50/LC50:
CAS# 75-05-8:
Draize test, rabbit, eye: 100 uL/24H Moderate;
Inhalation, mouse: LC50 = 2693 ppm/1H;
Inhalation, rabbit: LC50 = 2828 ppm/4H;
Inhalation, rat: LC50 = 7551 ppm/8H;
Oral, mouse: LD50 = 269 mg/kg;
Oral, rabbit: LD50 = 50 mg/kg;
Oral, rat: LD50 = 2460 mg/kg;
Skin, rabbit: LD50 = >2 gm/kg;

Carcinogenicity:
CAS# 75-05-8:
ACGIH: A4 - Not Classifiable as a Human Carcinogen
Epidemiology: No information available.
Teratogenicity: Embryo or Fetus-stunted fetus: Inhalation, hamster: TCLo=8000 ppm/1H (female 8 days after conception).; Specific Developmental Abnormalities - musculoskeletal: Oral, hamster TCLo = 300 mg/kg (female 8 days after conception).
Reproductive Effects: Fertility - post-implantation mortality: Oral, hamster: TDLo=400 mg/kg and Inhalation, hamster TCLo=5000 ppm/1H (female 8 days after conception).
Neurotoxicity: No information available.
Mutagenicity: Sex Chromosome Loss/Non-disjunction: Saccharomyces cerevisiae = 47600 ppm and Drosophila melongaster = 131 ppm.; Sister Chromatid Exchange: Hamster, ovary = 5 gm/L.; Inhalation, rat: TDL0 = 400 ppm/6H/24-I (produced liver tumors)
Other Studies: Open irritation test: Administration onto the skin (rabbit) = 500 mg (Mild).

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 1150 ppm; 24 Hr; TLm (hard water) Fathead Minnow: 1000 mg/L; 96 Hr; TLm (soft water) Bluegill/Sunfish: 1850 mg/L; 96 Hr; TLm (soft water) Fathead Minnow: 1640 mg/L; 96 Hr; LC50 (flow-bioassay) Fathead Minnow: 1640 mg/L; 96 Hr; EC50 (flow-bioassay) No data available.
Environmental: Estimated Koc value = 16. Acetonitrile is expected to weakly adsorb to most soils based on the Koc value. Volitization from soil surfaces and leaching into ground water is expected to be significant. Estimated BCF value = 0.3. This value indicates that acetonitrile will not significantly bioconcentrate in aquatic organisms or adsorb to suspended solids and sediments in water. Acetonitrile is unreactive towards photochemically-generated free radicals and direct photolysis in the gaseous phase.
Physical: No information available.
Other: Biodegradable.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: CAS# 75-05-8: waste number U003 (Ignitable waste, Toxic waste).

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	ACETONITRILE				No information available.
Hazard Class:	3				
UN Number:	UN1648				
Packing Group:	II				

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 75-05-8 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 75-05-8: Effective Date: 10/4/82; Sunset Date: 10/4/92

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

CERCLA Hazardous Substances and corresponding RQs
CAS# 75-05-8: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 75-05-8: acute, chronic, flammable.
Section 313
This material contains Acetonitrile (CAS# 75-05-8, 99 9%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 75-05-8 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 75-05-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XN F
Risk Phrases:
R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 36 Irritating to eyes.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 36/37 Wear suitable protective clothing and gloves.

WGK (Water Danger/Protection)
CAS# 75-05-8: 2
Canada - DSL/NDSL
CAS# 75-05-8 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of B2, D1B, D2B.
Canadian Ingredient Disclosure List
CAS# 75-05-8 is listed on the Canadian Ingredient Disclosure List.
Exposure Limits
CAS# 75-05-8: OEL-ARAB Republic of Egypt:TWA 40 ppm (70 mg/m3);Skin OEL-AUSTRALIA:TWA 40 ppm (70 mg/m3);STEL 60 ppm ;Skin OEL-AUSTRIA:TWA 40 ppm (70 mg/m3) OEL-BELGIUM:TWA 40 ppm (67 mg/m3);STEL 60 ppm (10 mg/m3);Skin OEL-DENMARK:TWA 40 ppm (70 mg/m3);STEL 60 ppm (10 mg/m3) OEL-FINLAND:TWA 40 ppm (70 mg/m3);STEL 60 ppm (10 mg/m3) OEL-FRANCE :TWA 40 ppm (70 mg/m3) OEL-GERMANY:TWA 40 ppm (70 mg/m3) OEL-HUNGARY :TWA 50 mg/m3;STEL 100 mg/m3;Skin JAN9 OEL-THE NETHERLANDS:TWA 40 ppm (70 mg/m3) OEL-THE PHILIPPINES:TWA 40 ppm (70 mg/m3) OEL-RUSSIA:STEL 10 mg/m3 OEL-SWITZERLAND:TWA 40 ppm (70 mg/m3);STEL 80 ppm ;Skin OEL-TURKEY:TWA 40 ppm (70 mg/m3) OEL-UNITED KINGDOM:TWA 40 ppm (70 mg/m3);STEL 60 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 8/24/1998
Revision #5 Date: 6/04/2002