




EMERGENCY NUMBERS:

 (USA) CHEMTREC : 1(800) 424-9300 (24hrs)
 (CAN) CANUTEC : 1(613) 996-6666 (24hrs)
 (USA) Anachemia : 1(518) 297-4444
 (CAN) Anachemia : 1(514) 489-5711

WHMIS	Protective Clothing	TDG Road/Rail
WHMIS CLASS: B-2 D-1A D-2B		TDG CLASS: 3 PIN: UN1648 PG: II
		

Section I. Product Identification and Uses

Product name	ACETONITRILE	CI#	Not available.
Chemical formula	CH3CN	CAS#	75-05-8
Synonyms	Methyl cyanide, Cyanomethane, Ethanenitrile, AC-0158, AC-0158P, GD-0158, GD-0159, 01104, 01112, 01093, 01097	Code	AC-0158
Supplier	Anachemia Canada. 255 Norman. Lachine (Montreal), Que H8R 1A3	Formula weight	41.05
		Supersedes	158-1
Material uses	For laboratory use only.		

Section II. Ingredients

Name	CAS #	%	TLV
1) ACETONITRILE	75-05-8	99	Exposure limits: ACGIH TWA 40 ppm (67 mg/m3) (Skin); STEL 60 ppm (101 mg/m3) (Skin).

Toxicity values of the hazardous ingredients
ACETONITRILE:

 ORAL (LD50): Acute: 177 mg/kg (Guinea pig). 50 mg/kg (Rabbit). 200 mg/kg (Cat).
 ORAL (LD50): Acute: 2460 mg/kg (Rat). 269 mg/kg (Mouse).
 DERMAL (LD50): Acute: >2000 mg/kg (Rabbit).
 VAPOR (LC50): Acute: 7551 ppm (Rat) (8 hour(s)). 2828 ppm (Rabbit) (4 hour(s)).
 VAPOR (LC50): Acute: 2693 ppm (Mouse) (1 hour(s)).

Section III. Physical Data

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Physical state and appearance / Odor	Clear, Colorless liquid with faint pungent odor.
pH (1% soln/water)	Not available.
Odor threshold	42 ppm
Percent volatile	>99% (V/V)
Freezing point	-45.7°C
Boiling point	81.6°C
Specific gravity	0.786 (Water = 1)
Vapor density	1.41 (Air = 1)
Vapor pressure	72.8 mm of Hg (@ 20°C)
Water/oil dist. coeff.	2.1
Evaporation rate	5.79 (n-Butyl acetate = 1).
Solubility	Miscible in water.

Section IV. Fire and Explosion Data

Flash point	OPEN CUP: 5.6°C (Tag open cup)
Flammable limits	LOWER: 3% UPPER: 16%
Auto-ignition temperature	524°C
Fire degradation products	Hydrogen cyanide, oxides of carbon and nitrogen.
Fire extinguishing procedures	Use DRY chemical, carbon dioxide, or alcohol-resistant foam. Water may be ineffective to extinguish fires. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode. Disperse vapors with water spray if they have not ignited. Cool containing vessels with flooding quantities of water until well after fire is out. Do not enter confined fire space without adequate protective clothing and approved positive pressure self-contained breathing apparatus.
Fire and Explosion Hazards	Extremely flammable. Vapor may travel considerable distance to source of ignition and flash back, eliminate all sources of ignition. Vapor forms explosive mixture with air. Container explosion may occur under fire conditions or when heated. Contact with oxidizers may cause fire and/or explosion. Sensitive to static discharge. The sensitivity to impact is not available. Emits toxic fumes under fire conditions.

Section V. Toxicological Properties

Routes of entry	Inhalation and ingestion. Eye contact. Skin contact. Skin absorption.
Effects of Acute Exposure	Harmful by ingestion, inhalation or skin absorption. Poison. Irritant. May cause liver, lung and thyroid damage. Acute effects may be delayed. Cyanosis. Target organs: blood, central nervous system, liver, kidneys, eyes, skin, cardiovascular system, respiratory system, lungs. 500 ppm (ACETONITRILE) is immediately dangerous to life or health.
Eye	Causes severe irritation with redness and blurred vision. Lachrymator. IRRITATION: EYE-RABBIT 20 mg OPEN SEVERE.
Skin	Causes skin irritation and inflammation. Liquid can be absorbed in toxic amounts through intact skin. See ingestion.
Inhalation	Material is irritating to mucous membranes and upper respiratory tract. May cause pulmonary edema. Prolonged and repeated inhalation may cause liver, kidney and lung damage. See ingestion.
Ingestion	May cause central nervous system effects (effects may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death). May cause gastrointestinal disturbances such as irritation, nausea, vomiting, and diarrhea. Other effects may include rapid pulse and breathing, low blood pressure, chest pain, sweating, hypersalivation and cyanosis. May cause liver, lung, thymus, brain and thyroid damage.

Section V. Toxicological Properties

Effects of Chronic Overexposure Toxicity similar to that of cyanide poisoning. Several hours may elapse between exposure and initiation of symptoms, due to the slow release of cyanide. Reported to cause adverse reproductive effects including birth defects, based on some tests in animals. Other similar tests have not supported these findings. Carcinogenic effects: Not available. To the best of our knowledge the chronic toxicity of this substance has not been fully investigated. Medical conditions which may be aggravated: Individuals with preexisting diseases of the skin, eye, liver, central nervous system or respiratory system may be more susceptible to the toxicity of overexposure to this product.

Section VI. First Aid Measures

Eye contact Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention. If symptomatic, treat as described under inhalation.

Skin contact Immediately flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash contaminated clothing before reusing. Discard contaminated leather articles such as shoes and belt. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Skin exposure could result in absorption and systemic cyanide poisoning. If symptomatic, treat as described under inhalation and get immediate medical attention.

Inhalation Get immediate medical attention. Remove patient to fresh air. If not breathing, ensure clear airway and institute cardiopulmonary resuscitation (CPR). Avoid mouth to mouth resuscitation. Use mouth to mask ventilation with one way valve to exhaust victim's expired air away from rescuer. Use of an Ambu bag or pressure demand valve with face mask is acceptable. Use 100% oxygen. If breathing is difficult ensure clear airway and use 100% oxygen. If victim is symptomatic, break an amyl nitrite ampule in a cloth and hold lightly under the victim's nose for 30 seconds every minute until sodium nitrite is administered. Use a new ampule every 3 minutes.

Ingestion Seek immediate medical attention. DO NOT induce vomiting. If symptomatic, treat as described under inhalation.

Section VII. Reactivity Data

Stability Stable. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.

Hazardous decomp. products Not available.

Incompatibility Oxidizing agents, acids, fluorine, nitrates, nitrites, nitric acid, chlorates, magnesium, chlorosulfonic acid, perchlorates, oleum, sulfuric acid, reducing agents, bases, indium, sodium, alkali metals, sulfites, nitrogen-fluoride compounds, nitrating agents.

Reaction Products Not available. Hazardous polymerization will not occur.

Section VIII. Preventive Measures

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Protective Clothing in case of spill and leak	Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Full suit.
Spill and leak	Evacuate the area. Stay upwind: Keep out of low areas. Eliminate all sources of ignition. Stop leak if without risk. Absorb on sand or vermiculite and place in a closed container for disposal. Use non-sparking tools. Transport outdoors. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch damaged container or spilled material. Use water spray curtain to divert vapor drift. Runoff to sewer may create fire or explosion hazard.
Waste disposal	This material and its container must be disposed of in a safe way. According to all applicable regulations. Harmful to aquatic life at low concentrations. Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.
Storage and Handling	Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe gas/fumes/vapor/spray. In case of insufficient ventilation, wear suitable respiratory equipment. Keep away from direct sunlight or strong incandescent light. Keep container tightly closed and dry. Manipulate under an adequate fume hood. Take precautionary measures against electrostatic discharges. Ground the container while dispensing. Ground all equipment containing material. Use only explosion proof equipment. Use non-sparking tools. Watch for accumulation in low confined areas. Empty containers may contain a hazardous residue. Handle and open container with care. Do not use pressure to dispense. This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling. In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible.). Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Outside storage is preferred.

Section IX. Protective Measures

Protective clothing	Splash goggles. Impervious neoprene gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. A OSHA/MSHA jointly approved respirator is advised in the absence of proper environmental controls. If more than TLV, do not breathe vapor. Wear self-contained breathing apparatus. Have available and use as appropriate: face shields, rubber suits, aprons, and boots. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.
Engineering controls	Use only in a chemical fume hood to keep airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Vapors are heavier than air and may travel along the ground or pool in low areas. Because vapor is heavy, ventilation must be provided at floor level as well as at higher levels. Do not use in unventilated spaces.

Section X. Other Information

Special Precautions or comments	<p>Extremely flammable liquid! Highly toxic! Irritant! Toxic effects may be delayed. Do not breathe vapor. Avoid all contact with the product. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Keep away from heat, sparks and flame. Use non-sparking tools. Handle and open container with care. Container should be opened only by a technically qualified person. RTECS no. AL7700000 (Acetonitrile)</p> <p>Synergistic materials: carbon tetrachloride, ethyl acetate (decreases toxicity); Acetone, acetophenone, ethanol, dioxane (increases toxicity).</p> <p>NOTES TO PHYSICIAN: The onset of symptoms is typically delayed up to several hours after oral ingestion, inhalation, or dermal contact. The prolonged duration of symptoms, regardless of route of exposure, may require repeat doses of cyanide antidotes. Treat as in cyanide poisoning. Toxicity may be delayed due to metabolic release of cyanide. If symptomatic, administer amyl nitrite until intravenous access then inject sodium nitrite (10 ml of 3% solution over 5 minutes) followed directly with sodium thiosulfate. With significant exposure, keep patient under observation for 24-36 hours. If signs of poisoning persist or reappear, repeat nitrite and thiosulfate injections 30 minutes later at one-half the original dose. General supportive therapy in the event of life-threatening complications may be more important than specific antidotes. If necessary, ventilate patient. In all symptomatic cases, oxygenate with 100% humidified oxygen. Treat acidosis with sodium bicarbonate. Treat seizures with diazepam, phenytoin or phenobarbital. Hyperbaric oxygen and hemodialysis may be useful in severe cases not responsive to supportive and antidotal therapy. Treat hypotension with IV fluids and place patient in trendelenburg position. If unresponsive, use vasopressors titrating as necessary to desired response. If pulmonary edema develops, maintain ventilation and oxygenation with close arterial blood gas monitoring. PEEP or CPAP may be necessary if pO2 remains below 50 mmHg. Avoid net positive fluid balance. Blood cyanide and serum thiocyanate levels will be helpful for documentation although they might not be available for several days. With oral ingestion, do not induce emesis. Gastric lavage may be performed with a large bore tube after endotracheal intubation. Administer activated charcoal slurry to prevent absorption. Administer one dose of a saline cathartic or sorbitol mixed with charcoal or give separately. Any patient with a potential ingestion of acetonitrile-containing products (acetonitrile as major component) should be admitted to an intensive care unit for evaluation and observation for at least 24 hours. Signs and/or symptoms of toxicity may be delayed in onset up to 14 hours and may persist for more than 60 hours postexposure, with cyclic deterioration. Patients should be closely observed in the intensive care for vomiting, which preceded the onset of serious toxicity within several hours in practically all reported cases. Vomiting should prompt stat clinical and laboratory evaluation (arterial blood gases) for signs of cyanide toxicity. Careful and frequent observation is essential.</p>
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NFPA

Prepared by MSDS Department/Département de F.S..

Validated 29-Aug-2006

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