TED PELLA, INC.
Microscopy Products for Science and Industry

Material Safety Data Sheet

Product No. 18612 Acetonitrile
Issue Date (06-26-96)
Review Date (06-01-12)

Section 1: Product and Company Identification

Product Name: Acetonitrile

Synonym: Cyanomethane, ethanenitrile, ethyl nitrile, methanecarbonitrile, methyl cyanide.

Company Name
Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477
Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA PEL mg/m3	ACGIH TLV mg/m3	NTP	IARC	OSHA regulated
Acetonitrile (75-05-8)	100	70	67	ND	ND	ND

Section 3: Hazard Identification

Emergency overview

Appearance: Colorless liquid with a sweet ethereal odor.
Immediate effects: Irritation of the nose and throat with sneezing, sore throat or runny nose.

Potential health effects

Primary Routes of entry: Inhalation, skin contact, eye contact.
Signs and Symptoms of Overexposure: Chest tightness or main, flushing of the face, central nervous system depression with dizziness, confusion, uncoordinated, drowsiness or unconsciousness; convulsions; impaired blood clotting with increased tendency toward bruising and bleeding; low blood pressure; increased heart rate; abnormal kidney function with altered urinalysis; and abnormal liver function with altered enzyme levels I blood. The on-set of symptoms may be delayed. Gross overexposure may cause fatality.
Eyes: Eye irritation with tearing, pain or blurred vision.
Skin: Slight irritation with itching, redness or swelling.
Ingestion: Nausea or vomiting.
Inhalation: Irritation of the nose and throat with sneezing, sore throat or runny nose.
Chronic Exposure: ND

Chemical Listed As Carcinogen Or Potential Carcinogen: This material contains 5 ppm Acrylonitrile (107-13-1) which is known in the state of California to cause cancer
See Toxicological Information (Section11)

Potential environmental effects

See Ecological Information (Section 12)

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Skin Contact: In case of contact, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. To prevent cross-contamination, properly dispose of contaminated clothing and shoes with minimal handling. Avoid contact.

Inhalation: If inhaled, immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: If swallowed, immediately give 2 glasses of water and induce vomiting. DO NOT GIVE Syrup of Ipecac. Never give anything by mouth to an unconscious person. Call a physician.

Note to physician

Treatment: Although the metabolic fate of this compound is not completely known, some nitriles are partially metabolized to cyanide. Symptoms may be delayed. If overexposed, treatment for cyanides may be indicated. Following exposure, the patient should be observed for 24-48 hours or more for symptoms of cyanide intoxication.

Treatment for cyanide intoxication:

1. If conscious but symptoms (nausea, difficult breathing, dizziness, etc.) are evident, give oxygen.

2. If consciousness is impaired (non- responsiveness, slurred speech, confusion, drowsiness) or the patient is unconscious but breathing, give oxygen and amyl nitrite by means of a respirator. To give amyl nitrite, break an ampoule in a gauze pad and insert into lip of mask for 15 seconds, then take away for 15 seconds. Repeat 5-6 times. If necessary, use a fresh ampoule every 3 minutes until the patient regains consciousness (usually 1-4 ampoules). Administer oxygen continuously. Guard against the ampoule entering the patient's mouth.

3. If not breathing, give oxygen and amyl nitrite immediately by means of a positive pressure respirator (artificial respiration). See 2 above, and continue to give oxygen simultaneously to aid recovery. If massive exposure occurred, consider keeping the first one or two ampoules in the lip of the mask continuously. Guard against the ampoule entering the patient's mouth.

Medical treatment: Do not over-react. Although prompt action is essential when symptoms of poisoning occur, a lucid conscious person who can communicate may not have significant cyanide poisoning and medical treatment may not be necessary.

"Treat what you see" is a good rule of thumb. Mildly symptomatic patients who remain alert may be managed by supportive care only.

First aid of oxygen and amyl nitrate may be the only treatment needed. However, in severe intoxication, medical treatment of I.V. sodium nitrite and sodium thiosulfate may be needed.

Medical treatment procedure:
Intravenous antidote: Sodium nitrite: Adult – 10 ml of 3% solution (300mg)

Draw solution from ampoule and inject slowly over 4-5 minutes (2 to 2.5ml/minute). As soon as practical, monitor blood pressure and continue checking pulse. Slow the rate of injection if hypotension (low blood pressure) occurs.

1. Sodium thiosulfate: Adult – 50 ml of 25% solution (12.5 grams).
Follow sodium nitrite with sodium thiosulfate injected at a rate of 2.3 ml/minute (10-20 minutes).
The total time for injection of these initial doses of both components at the recommended rates is lengthy, approximately 20-25 minutes.
Consider the body weight and condition of the patient when treating with sodium nitrite.
Both amyl nitrite and sodium nitrite produce methemoglobin, which reduces the oxygen carrying capacity of the blood. Methemoglobinemia is potentially harmful when hemoglobin levels exceed 20-30%.

If symptoms persist or recur after the initial treatment, repeat the antidote at one half the original dose and one hour after the original administration. Monitor methemoglobin levels when practical in every patient treated with the intravenous antidote.

Avoid over-treatment:

The above sodium nitrite injection is about one-third the lethal dose. Care should be taken to avoid excessive use. It is NOT essential that full quantities of antidote be given just because treatment was started. Should injection be stopped for any reason, keep track of the amount administered in case treatment needs to be restarted.

Medical Conditions generally Aggravated by Exposure: Increased susceptibility to the effects of Acetonitrile may be observed in persons with the pre-existing disease of the central nervous system, liver, kidneys, lungs, and cardiovascular system.

Section 5: Fire Fighting Measures
Flash Point: 6°C /43°F, (COC)
IMDG Reference Flash Point: 2°C
Flammable Limits: LEL: 4.4%; UEL16%
Auto-ignition point: 524°C / 975°F
Fire Extinguishing Media: Water spray, foam, dry chemical. Water may be ineffective. If leak or spill has not ignited, use water spray to disperse vapors and protect men attempting to stop the leak. Water spray may be used to flush spills away from exposures

and to dilute spills to non-flammable mixtures.
Special Fire Fighting Procedures: Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Wear full protective equipment. Cool tank/container with water spray. Keep personnel removed and upwind of fire
Unusual Fire and Explosion Hazards: Flammable liquid. Vapor forms explosive mixture with air. Vapors or gases may travel considerable distances to ignition source and flash back.
Hazardous combustion products: Hydrogen cyanide and carbon monoxide.
DOT Class: Flammable Liquid.

Section 6: Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled: Review fire fighting measures and handling (personnel) section before proceeding with clean up. Use appropriate personal protection equipment during clean up. Evacuate personnel, thoroughly ventilate area, and use self-contained breathing apparatus. Remove source of heat, sparks, flames, impact, friction or electricity. Dike spill. Prevent material from entering sewers, waterways or low areas. Recover free liquid for reuse or reclamation.
Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage
Precautions to be Taken in Handling and Storage: do not breathe vapor or mist. Do not get in eyes on skin, or on clothing. Wash exposed areas thoroughly after handling. Discard shoes if contaminated. Ground container when pouring. Use of non-sparking and explosion proof equipment may be necessary depending on the type of operation. Keep away from heat, sparks and flames. Do not mix with strong oxidants, alkalis, or acids. Store in a well ventilated place. Store in a cool place. Keep container tightly closed. Do not store with oxidizing agents.
Storage temperature: Cool place.
Storage Pressure: ND

Section 8: Exposure Controls / Personal Protection
Engineering Controls
Ventilation required: Use sufficient ventilation to keep employee exposure below recommenced exposure limits.
Personal Protection Equipment
Respiratory protection: Use a positive pressure air-supplied respirator if concentrations may exceed exposure limits.
Protective gloves: Butyl rubber or polyvinyl alcohol.
Skin protection: Impervious clothing, apron, boots, or whole body suit made from butyl rubber or polyvinyl alcohol.
Eye protection: Safety glasses, coverall chemical splash goggles and face shield.
Additional clothing and/or equipment: Safety shower and eye bath.
Exposure Guidelines
See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties
Appearance and Physical State: Colorless liquid.
Odor (threshold): Sweet, ethereal.
Specific Gravity (H_2O=1): 0.786 @20°C
Vapor Pressure (mm Hg): 72.8 @20°C
Vapor Density (air=1): 1.41
Percent Volatile by volume: 100 WT% @20°C
Evaporation Rate (butyl acetate=1): 5.79
Boiling Point: 81.6°C (178.9°F)
Freezing point / melting point: -45.7ºC (-50.3ºF)
pH: ND
Solubility in Water: Miscible.
Molecular Weight: 41.5

Section 10: Stability and Reactivity
Stability: Stable
Conditions to Avoid: Heat, sparks, flames, vapors.
Materials to Avoid (Incompatibility): Strong oxidants, strong aqueous bases and strong aqueous acids.
Decomposition Temperature: 500ºC (932ºF)
Hazardous Decomposition Products: ND
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information
Results of component toxicity test performed: Acetonitrile (75-05-8): Oral LD50: 6,500 mg/kg in rats. Dermal LD50: 984 mg/kg in rabbits. Inhalation 4hr LC50: 17,000 ppm in rats.
Repeated exposure caused histopathological changes of the kidneys, liver, lungs, thymus, brain, and stomach; changes in male reproductive organs, altered hematology, and decreased body weight
Some animal data suggest that Acetonitrile is weakly carcinogenic at high exposure levels, but only in male rats. No carcinogenicity was observed in female rats or in male or female mice. No animal data are available to define the reproductive toxicity of Acetonitrile. Animal data show developmental effects only at exposure levels producing other toxic effects in the adult animal. Acetonitrile has not produced genetic damage in bacterial cultures. There are reports indicating that Acetonitrile produce genetic damage in some animal or mammalian cell culture tests; however, there are other reports in the literature that suggest negative results.
Human experience: ND
This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information
Ecological Information: Aquatic toxicity: low toxicity. 96 hr Tlm - fathead minnows: 1,000 mg/L.
Chemical Fate Information: ND

Section 13 Disposal Considerations
RCRA 40 CFR 261 Classification: U003
Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal. Do not flush to surface water or sanitary sewer systems.

Section 14: Transportation Information
US DOT Information: Proper shipping name: Acetonitrile
Hazard Class: 3
Packaging group: II
UN Number: 1648
Limitations: ND
Reportable Quantity: 5,000 lb.
Tank Cars: 160,000 lb / 66,000 lb net
Tank Trucks: 45,000 lb net.
Steel Drums: 355 lb net.
IATA: Proper shipping name: Acetonitrile
Hazard Class: 3
Packing group: II
UN Number: 1648
Limitations: ND
Domestic shipments only: ND
Marine Pollutant: ND
Canadian TDG: ND
IMDG Page: Reference flash point: 2°
Limitations: ND

Section 15: Regulatory Information
United States Federal Regulations
MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.
SARA Extremely Hazardous Substance: No
SARA Toxic Chemicals: Yes
SARA Title III: CAS # 75-05-8: immediate, delayed, fire.
RCRA:U003
TSCA: Listed on the TSCA inventory.
CERCLA: Yes. RQ = 5000 lbs (2270 Kg)
State Regulations
California Proposition 65: This material contains 5 ppm Acrylonitrile (107-13-1) which is known to the State of California to cause cancer.
International Regulations
Canada WHMIS: ND
Europe EINECS Numbers: ND

Section 16: Other Information

Label Information: DOT/IMO label: Flammable liquid.
European Risk and Safety Phrases: ND
European symbols needed: ND
Canadian WHMIS Symbols: ND
Hazard Rating: Health: **3**; Fire: **3**; Reactivity: **1**
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Abbreviations used in this document

NE= Not established
NA= Not applicable
NIF= No Information Found
ND= No Data

Disclaimer