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ACETONITRILE- MATERIAL SAFETY DATA SHEET

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24 Hour EMERGENCY CONTACT

U.S- CHEMTREC 1-800-424-9300

CANADA- CANUTEC 613-996-6666

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Matheson Tri-Gas, Inc.

The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.

USA

959 Route 46 East
Parsippany, New Jersey
07054-0624 USA
Phone: 973-257-1100

CANADA

530 Watson Street
Whitby, Ontario
L1N 5R9 Canada
Phone: 905-668-3570

SUBSTANCE: ACETONITRILE

SYMBOL: CH₃CN

TRADE NAMES/SYNONYMS:

CYANOMETHANE; ETHANENITRILE; ETHYL NITRILE; METHANECARBONITRILE; METHYL CYANIDE; RCRA U003; STCC 4907405; UN 1648; A-999; A-998; A-24; O-1034; A-21; C₂H₃N; MAT00170; RTECS AL7700000

CHEMICAL FAMILY: nitriles, aliphatic

CREATION DATE: Jan 24 1989

REVISION DATE: Mar 16 1999

2. COMPOSITION, INFORMATION ON INGREDIENTS

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COMPONENT: ACETONITRILE

CAS NUMBER: 75-05-8

EC NUMBER (EINECS): 200-835-2

EC INDEX NUMBER: 608-001-00-3

PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

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NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

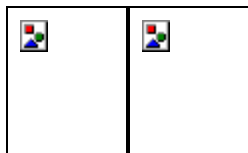
EC CLASSIFICATION (ASSIGNED):

F Highly Flammable

T Toxic

R 11-23/24/25

EC Classification may be inconsistent with independently-researched data.



EMERGENCY OVERVIEW:

Color: colorless

Physical Form: liquid

Odor: sweet odor

Major Health Hazards: respiratory tract irritation, eye irritation

Physical Hazards: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

Short Term Exposure: irritation, nausea, stomach pain, loss of voice, chest and stomach pain, wheezing, headache, symptoms of drunkenness, disorientation, suffocation, convulsions, coma

Long Term Exposure: lung damage

SKIN CONTACT:

Short Term Exposure: same as effects reported in short term inhalation, irritation, suffocation

Long Term Exposure: same as effects reported in short term exposure

EYE CONTACT:

Short Term Exposure: irritation, tearing

Long Term Exposure: same as effects reported in short term exposure

INGESTION:

Short Term Exposure: same as effects reported in short term inhalation, bluish skin color, suffocation, coma

Long Term Exposure: no information on significant adverse effects

CARCINOGEN STATUS:

OSHA: N

NTP: N

IARC: N

4. FIRST AID MEASURES

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INHALATION:

Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.

SKIN CONTACT:

Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

ANTIDOTE:

amyl nitrite, inhalation; sodium nitrite, intravenous; sodium thiosulfate, infusion; oxygen.

5. FIRE FIGHTING MEASURES

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FIRE AND EXPLOSION HAZARDS:

Severe fire hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

EXTINGUISHING MEDIA:

alcohol resistant foam, carbon dioxide, regular dry chemical, water, alcohol resistant foam

Large fires: Use alcohol-resistant foam or flood with fine water spray.

FIRE FIGHTING:

Move container from fire area if it can be done without risk. Dike for later disposal. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

FLASH POINT:

43 F (6 C) (OC)

LOWER FLAMMABLE LIMIT:

3%

UPPER FLAMMABLE LIMIT:

16%

AUTOIGNITION:

975 F (524 C)

FLAMMABILITY CLASS (OSHA):

IB

6. ACCIDENTAL RELEASE MEASURES

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OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Reportable Quantity (RQ): Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Protect from physical damage. Store outside or in a detached building. Inside storage: Store with flammable liquids. Keep separated from incompatible substances. Grounding and bonding required. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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EXPOSURE LIMITS:**ACETONITRILE:**

40 ppm (70 mg/m³) OSHA TWA
60 ppm (105 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
40 ppm (67 mg/m³) ACGIH TWA
60 ppm (101 mg/m³) ACGIH STEL
20 ppm (34 mg/m³) NIOSH recommended TWA

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

200 ppm

Any chemical cartridge respirator with organic vapor cartridge(s).

Any supplied-air respirator.

500 ppm

Any supplied-air respirator.

Any powered, air-purifying respirator with organic vapor cartridge(s).

Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).

Any air-purifying respirator with a full facepiece and an organic vapor canister.

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

Escape -

Any air-purifying respirator with a full facepiece and an organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL STATE: liquid

COLOR: colorless

ODOR: sweet odor

MOLECULAR WEIGHT: 41.05

MOLECULAR FORMULA: C-H₃-C-N

BOILING POINT: 180 F (82 C)

FREEZING POINT: -51 F (-46 C)

VAPOR PRESSURE: 73 mmHg @ 20 C

VAPOR DENSITY (air=1): 1.42

SPECIFIC GRAVITY (water=1): 0.7857

WATER SOLUBILITY: soluble

PH: Not available

VOLATILITY: Not available

ODOR THRESHOLD: 40 ppm

EVAPORATION RATE: 5.79 (butyl acetate=1)

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, acetone, benzene, methyl acetate, ethyl acetate, chloroform, carbon tetrachloride, ethylene chloride

10. STABILITY AND REACTIVITY

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REACTIVITY:

Stable at normal temperatures and pressure.

CONDITIONS TO AVOID:

Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers.

INCOMPATIBILITIES:

acids, metals, bases, oxidizing materials, combustible materials, reducing agents

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: cyanides

POLYMERIZATION:

Will not polymerize.

11. TOXICOLOGICAL INFORMATION

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ACETONITRILE:

Irritation Data:

500 mg open skin-rabbit mild

Toxicity Data:

7551 ppm/8 hour(s) inhalation-rat LC50; 1250 ul/kg skin-rabbit LD50; 2460 mg/kg oral-rat LD50

Carcinogen Status:

ACGIH: A4 -Not Classifiable as a Human Carcinogen

Local Effects:

Irritant: inhalation, eye

Acute Toxicity Level:

Moderately Toxic: dermal absorption, ingestion

Slightly Toxic: inhalation

Target Organs:

blood

Medical Conditions Aggravated By Exposure:

central nervous system disorders, heart or cardiovascular disorders, kidney disorders, liver disorders, skin disorders and allergies

Tumorigenic Data:

Available.

Mutagenic Data:

Available.

Reproductive Effects Data:

Available.

12. ECOLOGICAL INFORMATION

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ECOTOXICITY DATA:**Fish Toxicity:**

1000000 ug/L 96 hour(s) LC50 (Mortality) Fathead minnow (*Pimephales promelas*)

Invertebrate Toxicity:

0.024-0.199 ug/L 4-72 hour(s) (Residue) Bent-nosed clam (*Macoma nasuta*)

Algal Toxicity:

11.2 ug/L 24 hour(s) EC50 (Photosynthesis) Green algae (*Selenastrum capricornutum*)

13. DISPOSAL CONSIDERATIONS

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Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U003.

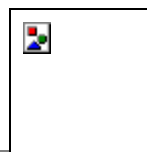
Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

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U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:

Acetonitrile-UN1648; 3; II; Flammable liquid



15. REGULATORY INFORMATION

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U.S. REGULATIONS:

TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed

CERCLA SECTION 103 (40CFR302.4): Y

ACETONITRILE: 5000 LBS RQ

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65): Y

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):

ACUTE: Y

CHRONIC: N

FIRE: Y

REACTIVE: N

SUDDEN RELEASE: N

OSHA PROCESS SAFETY (29CFR1910.119): N

STATE REGULATIONS:

California Proposition 65: N

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 200-835-2

EC RISK AND SAFETY PHRASES:

R 11	Highly flammable.
R 23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
S 1/2	Keep locked-up and out of reach of children.
S 16	Keep away from sources of ignition - No smoking.
S 27	Take off immediately all contaminated clothing.
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. OTHER INFORMATION

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