

MATERIAL SAFETY DATA SHEET**Trade Name: Acetonitrile****Section I - Chemical Products & Company Identification**

Proligo LLC	Proligo Biochemie GmbH	Creation Date: 2/99
6200 Lookout Rd	Georg-Heyken-Str. 14	Revision Date: 3/04
Boulder, Colorado 80301 USA	Hamburg, Germany D21147	Revision Number: 2

Product #: L010010, L010250, L010400, L015000, L810045

For emergency source information (USA) contact: Chemtrec 1-800-424-9300 24 Hours

For emergency source information (International) contact: Chemtrec 001-703-527-3887 (USA) 24 Hours

Trade Names/Synonyms: Methyl cyanide, ethanenitrile, cyanomethaneChemical Family: Organic solution**Section 2 - Composition/Information On Ingredients - % by Weight**

<u>Chemicals:</u>	<u>Composition (w/w) %:</u>	<u>CAS Number:</u>	<u>Classification:</u>	<u>Odor Threshold:</u>
Acetonitrile	100%	75-05-8	F; R:11 T; R:23/24/25	40 ppm

Section 3 - Hazards IdentificationNFPA (National Fire Protection Association) Ratings (Scale 0-4): **Health: 4** **Flammable: 3** **Reactivity: 1****Emergency Overview:** Toxic by inhalation, in contact with skin and if swallowed. Irritating to the eyes, respiratory system and skin. The target organs are the central nervous system and the liver. The toxicological properties of this material have not been thoroughly investigated. **Forms cyanide in the body.****Potential Health Effects:**

Skin Contact:	Short Term Exposure:	Irritating
	Long Term Exposure:	Toxic
Eye Contact:	Short Term Exposure:	Irritating
	Long Term Exposure:	May be harmful
Ingestion:	Short Term Exposure:	Harmful, nausea, vomiting, diarrhea, headache, dizziness, rashes, and cyanosis. Forms cyanide in the body.
	Long Term Exposure:	Mental excitement or depression, drowsiness, impaired perception, incoordination, stupor, coma and death. Forms cyanide in the body. Toxic
Inhalation:	Short Term Exposure:	Irritating
	Long Term Exposure:	Toxic
Injection:	Short Term Exposure:	No information available
	Long Term Exposure:	No information available

CARCINOGEN/REPRODUCTIVE TOXIN STATUS:**Acetonitrile****OSHA:** Not Listed

MATERIAL SAFETY DATA SHEET**Trade Name: Acetonitrile****NTP:** Not Listed**IARC:** Not Listed**According to 91/155 EC:**

Hazard designation:

T Toxic

F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly Flammable

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed

Section 4: First Aid Measures**Skin Contact:** Remove contaminated clothing. Flush affected area with water and then wash with soap or mild detergent and water. Observe for signs of irritation. If irritation is present, get medical attention.**Eye Contact:** Wash eyes with large amounts of water or normal saline for at least 15 minutes. Observe for signs of irritation. If irritation is present, get medical attention.**Ingestion:** Get medical attention.**Inhalation:** Remove from exposure area to fresh air immediately. Get medical attention immediately.**Injection:** If accidentally injected, get medical attention.**Note to Physician:** There is no specific antidote. Treat symptomatically and supportively.**Section 5: Fire Fighting Measures****FIRE AND EXPLOSION HAZARD: FlashPoint:** 42°F or 5°C. **Explosion Limits:** LL 3.0 % and UL 16% (in air).**AUTOIGNITION TEMPERATURE:** 973°F or 522°C. **CLASS 1B FLAMMABLE LIQUID****EXTINGUISHING MEDIA:** Use water spray, carbon dioxide or chemical foam, or dry chemical. Water may be effective for cooling, but may not effect extinguishment.**SPECIFIC HAZARDS:** Vapors may travel considerable distance to source of ignition and flashback. Container explosion may occur under fire conditions. Emits toxic fumes under fire conditions.**PROTECTION OF FIREFIGHTERS:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use water spray to cool fire-exposed containers.**Section 6: Accidental Release Measures****OCCUPATIONAL SPILL:** Evacuate area immediately, if spill occurs. Shut off all sources of ignition. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Cover spillage with carbon absorbent, place spillage in appropriate container for waste disposal. Wash contaminated clothing before reuse. (See Section 8)**US CERCLA REPORTABLE QUANTITY (RQ):** 5000 lbs. (RCRA Code U003)**Section 7 - Handling and Storage**

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Observe all federal, state and local regulations. Do not breathe fumes. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep tightly closed. Store in cool dry place. Use prudent laboratory practices for handling and storage of chemical substances. Avoid sources of ignition.

Section 8 - Exposure Controls/Personal Protection

Exposure Controls: Use in laboratory hood or other ventilated device. Wear appropriate approved respirator where no engineering controls exist. Keep away from sources of ignition. Use prudent laboratory practices for handling chemical substances of unknown toxicity.

Eye Protection: Employees must wear splash-proof safety goggles to prevent eye contact with this substance.

Clothing: Employee must wear appropriate protective clothing (laboratory coat with long sleeves) and equipment to prevent skin contact with this material.

Gloves: Employee must wear appropriate protective gloves (chemical resistant) to prevent contact with this material.

Permissible Exposure Limits (USA):

	Acetonitrile
<u>ACGIH TWA (ppm)</u>	20
<u>ACGIH STEL/C (ppm)</u>	60
<u>IDHL (ppm)</u>	4000
<u>OSHA (ppm)</u>	40
<u>NIOSH (ppm)</u>	20

According to 91/155 EC:

Components with limit values that require monitoring at the workplace:

Acetonitrile (CAS # 75-05-8) 100%

OEL: Short-term value: 105 mg/m³, 60 ml/ m³

Long-term value: 70 mg/m³, 40 ml/ m³

*Additional information:

The lists that were valid during the compilation were used as basis.

No further data; see item 7

Section 9 - Physical and Chemical Properties

DESCRIPTION: Liquid, Colorless, with aromatic odor

SOLUBILITY: Fully miscible

FLASHPOINT: 5°C (41°F)(for Acetonitrile)

BOILING POINT: 82°C (179.6°F) at 1000 mBar (for Acetonitrile)

MELTING POINT: -46°C (-50.8°F)

FREEZING POINT: -45°C (-49°F)

VAPOR PRESSURE: 97 mBar at 20.0°C (for Acetonitrile)

VAPOR DENSITY: 1.5 (Acetonitrile, air =1)

pH: pH 3 at 100 g/L in water(20°C, 68°F)

Danger of Explosion: Product is not explosive. However, formation of explosive air/steam mixtures is possible

Critical values for Explosion: Lower: 3.0 % by volume
Upper: 16.0 % by volume

Self-inflammability: 525°C (977°F)

Solvent Content: 0% Water

Section 10 - Stability and Reactivity

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STABILITY:	Stable at room temperature.
REACTIVITY:	Strong oxidizers. Forms explosive mixture with air (flashpoint 42°F/6°C).
CONDITIONS TO AVOID:	Contact with strong oxidizers. May accumulate static electrical charges, and may cause ignition of its vapors. In case of fire: Hydrogen cyanide (prussic acid) Nitrogen oxides (NOx)
INCOMPATIBILITIES:	Strong oxidizing agents. Incompatible with water if acidic/alkaline, acids, caustics, nitrating agents, indium, nitrogen tetroxide, n-fluoro compounds, sulfur trioxide, iron (III) salts of perchlorate, perfluorourea, nitrogen-fluorine compounds.
DECOMPOSITION PRODUCTS:	Does not decompose if used according to specifications
POLYMERIZATION:	Does not polymerize

Section 11 - Toxicology Information

TOXICITY:	The toxicological properties of this material have not been fully investigated. Please note that acetonitrile can form cyanide in the body, this conversion is slow and can cause a delay in symptoms. <u>Acetonitrile</u> :LD ₅₀ Oral-Rat=2460 mg/kg LC ₅₀ Inhal-Rat=7551 ppm/8 hrs.
CARCINOGEN STATUS:	Not classifiable as human carcinogen.
LOCAL EFFECTS:	See section 3
TARGET EFFECTS:	Kidneys, liver, lungs, skin, eyes, CNS, cardiovascular system. Forms cyanide in the body. No chronic disease has been reported.
AT INCREASED RISK FROM EXPOSURE:	No information available

Chemical Name:	RTECS Number:
Acetonitrile	AL7700000

According to 91/155 EC:

Danger by skin resorption.

Inhalation of concentrated vapors as well as oral intake will lead to anaesthesia – like conditions and headache, dizziness, ect. Forms cyanide in the body. This is slow and can cause a delay in symptoms like difficulty breathing, stupor, coma and death.

*Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version;

Toxic

Section 12 - Ecological Information

ENVIRONMENTAL IMPACT RATING (0-4):	No data available.
ACUTE AQUATIC TOXICITY:	<u>Acetonitrile</u> : EPA: 970 µg/L ambient goal based on health effects. USSR-UNEP/IRPTC (MAC): 0.7 mg/ml (water bodies) Acetonitrile is stable and infinitely soluble in water.
DEGRADABILITY:	No data available.
LOG BIOCONCENTRATION FACTOR (BCF):	No data available.

MATERIAL SAFETY DATA SHEET**Trade Name: Acetonitrile****According to 91/155 EC:**

This product is easily biodegradable.

Behaviour in environmental systems:

Components: Verteilung: log P (o/w): -0.34

Mobility and bioaccumulation potential: Low bioaccumulation potential.

Ecotoxicity effects: Acquatic toxicity: Acetonitrile LC: 5850 mg/l (leu)

Section 13 - Disposal Information

Observe all Federal, State, and Local Regulations.

According to 91/155 EC:

Product:

Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:

Recommendation: disposal must be made according to official regulations.

Recommended cleaning agent: Water, if necessary with cleaning agent

Before cleaning use up or empty container completely.

Section 14 - Transportation Information

Ship as regulated material. Transportation restrictions apply. The acute toxicity profile does warrant shipment as a hazardous material (DOT) or a dangerous good (IATA).

UN1648**Hazard Class 3****Label Requirements: Acetonitrile****According to 91/155 EC:**

Land transport ADR/RID(cross-border)

- ADR/RID-GGVS/E Class: 3 Inflammable liquids
- Number/Letter: 3b
- Kemler Number: 33
- UN-Number: 1648
- Label: 3
- Designation of goods: Acetonitrile

Maritime transport IMDG:

- IMDG Class: 3.2
- Page: 3173
- UN Number: 1648
- Packaging group: II

- EMS Number: 3-02
- MFAG: 215
- Correct technical name: Acetonitrile

Air transport ICAO-TI and IATA-DGR:

- ICAO/IATA Class: 3
- UN/ID Number: 1648
- Packaging group: II
- Correct technical name: Acetonitrile

Section 15 - Regulatory Information

MATERIAL SAFETY DATA SHEET**Trade Name: Acetonitrile****Acetonitrile****Europe:****EINECS/ELINCS:** 200-835-2
EC INDEX NO. 608-001-00-3**Canada:****NDSL/DSL:** DSL**United States:****TSCA STATUS:** Yes
CERCLA SECTION 103 (40 CFR 302.4): 5000 lbs.
SARA SECTION 302 (40 CFR 355.30): No
SARA SECTION 304 (40 CFR 355.40): No
SARA SECTION 313 (40 CFR 372.65): Yes
OSHA PROCESS SAFETY (29 CFR 1910.119): No
CALIFORNIA PROPOSITION 65 No
SARA ACUTE HAZARD (40 CFR 370.21) Yes
CHRONIC HAZARD: Yes
FIRE HAZARD: Yes
REACTIVITY HAZARD: Yes
SUDDEN RELEASE HAZARD: No**Classification:****F; R; 11** **T; R: 23/24/25**
Symbols: F (Flammable) and T (Toxic)**Risk Phrase: Mixture****R: 11**
Highly Flammable**R: 23/24/25**
Toxic by inhalation, in contact with skin and if swallowed.**Safety Phrases: Mixture****S: 16**
Keep away from sources of ignition- No Smoking.**S: 27**
Take off immediately all contaminated clothing**S: 36/37**
Wear suitable protective clothing and gloves.**S: 45**
In case of accident or if you feel unwell, seek medical advice immediately.**For Laboratory R&D Use Only.****According to 91/155 EC:**
National Regulations
Classification according to VbF: B

MATERIAL SAFETY DATA SHEET

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Technical instructions (air):

Class Share in %: III 100

Section 16 - Other

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