

1. Product.

Product name: Acetonitrile.
Chemical formula: C₂H₃N.

2. Identification/ Composition of Ingredients.

<u>Chemical name*</u>	<u>CAS No.</u>	<u>%</u>	<u>EC Number</u>	<u>Symbol</u>	<u>R-phrases</u>
Acetonitrile	75-05-8	100	200-835-2	F, Xn	R11, R20/21/22, R36

* Occupational Exposure Limit(s), if available, are listed in section 8.

3. Hazards Identification.

Physical/chemical hazards: Highly flammable.
Human health hazards: Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes.

Effects and symptoms:

Eyes: Causes eye irritation.

Skin: Harmful if absorbed through the skin. Harmful on prolonged or repeated skin contact. Prolonged or repeated contact can de-fat the skin and lead to irritation and/or dermatitis.

Inhalation: Harmful if inhaled. Irritating to respiratory system. May cause convulsions, mental confusion/disorientation, coma and death.

Ingestion: Harmful if swallowed. Exposure can cause nausea, headache and vomiting. May cause convulsions, coma and death.

4. First Aid Measures.

First aid measures:

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin contact: After contact with skin, wash immediately with plenty of water. Remove contaminated clothing and shoes. Place the victim under a deluge shower. Wash clothing before reuse. Thoroughly clean shoes before reuse. Contaminated leather, particularly footwear, must be discarded. Note that contaminated clothing may be a fire hazard. Get medical attention immediately.



Inhalation:

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation. Resuscitate using a mouth-to-mask with one-way valve or with Ambu Bag. **WARNING:** it may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled vapour is toxic, infectious or corrosive. Get medical attention immediately.

Cyanide first aid treatment (containing amyl nitrite capsules) must be available at site. Authorized personnel, acting under standing instruction, may break a capsule of amyl nitrite in a handkerchief and hold it about one inch from the patients mouth and nostrils for 30 seconds every minute. If not breathing, if irregular breathing, or respiratory arrest occurs provide artificial respiration or oxygen by trained personnel.

Ingestion:

If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Never give anything by mouth to an unconscious person. If symptoms of poisoning develop, treat as for inhalation. Get medical attention immediately.

Note to physician:

Upon absorption and metabolism acetonitrile immediately begins a low release of cyanide, which can continue for several hours. The toxic effects and associated clinical signs of cyanide poisoning may therefore be delayed. Take a blood sample in all cases for blood cyanide using fluoride/oxalate tube and chill immediately and arrange urgent analysis. Blood cyanide levels will take some time to become available and are generally only useful as a retrospective indicator of exposure. Treatment decisions must therefore be based on the clinical features of each individual case, without waiting for blood cyanide results. If the patient is conscious and breathing normally, administration of oxygen is the only treatment necessary. In a deteriorating clinical situation, with a patient's conscious level decreasing, in addition to the need for cardio-pulmonary resuscitation, consideration should be given to the use of a specific cyanide antidote [dicobalt edetate(kelocyanor)]. **THIS SPECIFIC ANTIDOTE IS DANGEROUS WHEN ADMINISTERED IN THE ABSENCE OF SERIOUS CYANIDE POISONING.** One amount of dicobalt edetate (300 mg) diluted in 20 ml glucose solution is given by slow intravenous injection, being careful to avoid extravasation. Constant pulse and blood pressure monitoring is required, along with facilities for resuscitation, as sudden severe fall in blood pressure can occur during injection. Treatment may be repeated if there is an adequate response to the initial injection.

5. Fire Fighting Measures.


- Suitable extinguishing media: In case of fire, use water spray (fog), foam, dry chemical or CO₂.
- Hazardous decomposition products: These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).
- Unusual fire/explosion hazards: This material is combustible/flammable and is sensitive to fire, heat and static discharge. Highly flammable liquid and vapour. Vapour may cause flash fire. Vapours may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Special fire-fighting procedures: DO NOT FIGHT FIRE WHEN IT REACHES MATERIAL. With draw from fire and let it burn. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
- Protection of fire-fighters: Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Fire-fighters protective clothing will provide limited protection.

6. Accidental Release Measures.

- Large spill and leak: Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Follow all fire fighting procedures (section 5). Do not touch or walk through spilled material. If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion proof means to transfer material to a sealed, appropriate container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in appropriate container for disposal. Minimise contact of spilled material with soils to prevent runoff to surface waterways. See section 13 for Waste Disposal Information.
- Personal protection – large spill: Splash goggles. Full suit. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist before handling this product.

7. Handling & Storage.

- Handling: Do not ingest. Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Keep away



from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling.

Storage: Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Storage tanks must be positioned within a bunded area.

Packaging materials recommended: Use original container.

8. Exposure Control/ Personal Protection:

Engineering measures: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the workstation location.

Hygiene measures: Wash hands, forearms and face thoroughly after handling and before eating, smoking, using lavatory and at the end of day.

Ingredient name

Acetonitrile:

Occupational Exposure Limits

80/1107/EEC (Europe, 1991) TWA: 70 mg/m³; TWA: 40 ppm.

Personal protective equipment:

Respiratory system: Use only with adequate ventilation. Do not breathe vapour or mist. If operating conditions cause high vapour concentrations or TLV is exceeded, use supplied-air respirator.


Skin and body: Do not get on skin or clothing. Wear butyl rubber boots and neoprene suit.

Hands: Butyl rubber gloves. PTFE (Teflon) gloves.

Eyes: Avoid contact with eyes. Chemical splash goggles.

9. Physical and Chemical Properties.

Autoignition temperature: 524°C (975.2°F)
Flash point: Closed sup: 2°C (35.6°F) (Pensky Martin)
Fire haz. in presence of var. subs: Vapour may form explosive mixtures with air.
Explosion limits: Lower: 3%; Upper: 17%



Colour:	Colourless.
Odour:	Faint odour, pungent.
Physical state:	Liquid.
Boiling point:	81.72°C (179.1°F)
Melting point:	- 41.85°C (-43.3°F)
Density:	0.782 g/cm ³ (20°C / 68°F)
Vapour density (air = 1):	1.42 (air = 1)
Vapour pressure:	96.9758 kPa (727.5 mmHg @ 20°C)
Evaporation rate:	2.33 compared to (n-butyl acetate = 1)
Solubility:	Easily soluble in cold water.
LogK _{ow} :	The product is more soluble in water; log _(octanol/water) – 0.34
Viscosity:	Kinematic: 0.35 cSt at 20°C

10. Stability & Reactivity.

Conditions to avoid:	Keep away from heat, sparks and flame.
Incompatibility with various subs:	Reactive with oxidising agents.
Hazardous polymerisation:	Will not occur.

11. Toxicological Information.

Acute toxicity:	Acute oral toxicity (LD50): 2730 – 3800 mg/kg [rat]. Acute oral toxicity (LD50): 617 mg/kg (mouse). Acute dermal toxicity (LD50): > 2000 mg/kg [rabbit] Acute toxicity of the vapour (LC50): 27.5 mg/l 4 hours [rat] Acute toxicity of the vapour (LC50): 6 mg/l 4 hours (mouse)
Carcinogenic effects:	No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH, the International Agency for Research on Cancer (IARC) or the European Commission (EC). Classified A4 (Not classifiable for human or animal) by ACGIH [ACETONITRILE]
Mutagenic effects:	Non-mutagenic for bacteria and/or yeast.
Reproductive effects:	Adverse effects on the developing foetus or on reproduction have been reported in experimental animal studies at doses that were toxic to the mother.
Other information:	Sub-acute/sub-chronic toxicity: Adverse effects: liver, blood (rat)

12. Ecological Information.

Ecotoxicity:	(LC50): > 1000 mg/l, 96 hours [fish]. Practically non-toxic to fish.
--------------	--



Persistence potential:	This product is readily biodegradable.
Mobility:	The product is poorly absorbed onto soils or sediments. The product infiltrate soil and contaminate water. This product is likely to volatilize rapidly in the air because of its high vapour pressure. The product will dissolve rapidly in water.
Bioaccumulative potential:	This product is not expected to bioaccumulate through food chains in the environment.

13. Disposal Information.

Methods of disposal/waste of Residues/contaminated packaging:	Incinerate in a licensed high temperature hazardous waste incinerator. Consult an environmental professional to determine if local or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations. Empty containers may contain harmful, flammable/combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incinerations as appropriate.
---	--

Waste classification:	Not applicable.
-----------------------	-----------------

14. Transport Information.

<u>Land – road/railway</u>	UN number: 1648 Proper shipping name: Acetonitrile ADR/RID Class: 3 Packing group: II CEPIC Tremcard number: 148 UK emergency action card: 2WE Hazard identification number: 33
<u>Sea</u>	Proper shipping name: Acetonitrile IMDG class: 3 UN number: 1648 Packing group: II Emergency schedules (EmS): 3-06 Marine pollutant: Not pollutant.
<u>Air</u>	Proper shipping name: Acetonitrile



IATA-DGR class: 3
 UN number: 1648
 Packing group: II

Inland waterways

UN/ID number: 1648
 Proper shipping name: Acetonitrile
 ADNR classification: 3

15. Labelling Information.

Classification: Highly flammable, harmful.

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.

Contains: Acetonitrile.

Product use: Classification and labelling have been performed according to EU directives 67/548/EEC, 88/379/EEC including amendments and the intended use – industrial applications.

Regulatory lists: Australian inventory (AICS): listed on inventory.
 Canada inventory (DSL): listed on inventory.
 China inventory (IECS): listed on inventory.
 EC inventory (EINCES/ELINCES): listed on inventory.
 Japan inventory (ENCS): listed on inventory.
 Korea inventory (ECL): listed on inventory.
 Philippine inventory (PICCS): listed on inventory.
 US inventory (TSCA): listed on inventory.

16. Other Information.

Information contained in this publication, while accurate to the best knowledge and belief of Carbon Group is not intended and should not be construed as a warranty or representation for which Carbon Group assumes any legal responsibility.

Any information or advice obtained from Carbon Group otherwise than by means of this publication and whether relating to Carbon Group materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Carbon Group materials are suitable for the particular purpose intended.



Insofar as materials not manufactured or supplied by Carbon Group are used with or instead of Carbon Group material, the customer should ensure that he has received from the manufacturer or supplier all technical data and other information relating to such materials.

Carbon Group accepts no liability whatsoever (except as otherwise expressly provided by law) arising out of the use of the information supplied, the application, adaptation or processing of the products described herein, the use of other materials in lieu of Carbon Group materials or the use of Carbon Group materials in conjunction with other materials.

Supplier:**Carbon Group****Ringaskiddy,****Co. Cork.****Tel: 021 – 4378988****Fax: 021 -4378950**