



# SAFETY DATA SHEET

## 1. Identification

|   |   |                 |
|---|---|-----------------|
| <b>Product identifier</b>                                     | <b>Alcohol Determination-Acetonitrile</b>                                 |                 |
| <b>Other means of identification</b>                          |   |                 |
| <b>Catalog number</b>   | 1012699   |                 |
| <b>Recommended use</b>  | For analytical laboratory use only.                                       |                 |
| <b>Recommended restrictions</b>                               | Not for use as a drug. Not for administration to humans or animals.       |                 |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |   |                 |
| <b>Manufacturer</b>   |   |                 |
| <b>Company name</b>   | U. S. Pharmacopeia  |                 |
| <b>Address</b>  | 12601 Twinbrook Parkway<br>Rockville<br>MD<br>20852-1790<br>United States |                 |
| <b>Telephone</b>  | Technical Services  | 301-816-8129    |
| <b>Website</b>  | www.usp.org   |                 |
| <b>E-mail</b>   | RSTECH@usp.org  |                 |
| <b>Emergency phone number</b>                                 | CHEMTREC within US & Canada   | 1-800-424-9300  |
|   | CHEMTREC outside US & Canada  | +1 703-527-3887 |

## 2. Hazard(s) identification

|                              |                   |            |
|------------------------------|-------------------|------------|
| <b>Physical hazards</b>      | Flammable liquids | Category 3 |
| <b>Health hazards</b>        | Not classified.   |            |
| <b>Environmental hazards</b> | Not classified.   |            |
| <b>OSHA defined hazards</b>  | Not classified.   |            |

### Label elements



|  |  |
|--|--|
| <b>Signal word</b>                               | Warning  |
| <b>Hazard statement</b>                          | Flammable liquid and vapor.  |
| <b>Precautionary statement</b>                   |  |
| <b>Prevention</b>                                | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use explosion-proof electrical/ventilating/lighting equipment. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection. |
| <b>Response</b>                                  | If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use appropriate media to extinguish.  |
| <b>Storage</b>                                   | Store in a well-ventilated place. Keep cool.   |
| <b>Disposal</b>                                  | Dispose of contents/container in accordance with local/regional/national/international regulations.  |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.  |
| <b>Supplemental information</b>                  | None.  |

## 3. Composition/information on ingredients

### Mixture

| Chemical name | Common name and synonyms                        | CAS number | %  |
|---------------|---|------------|----|
| Water         |   | 7732-18-5  | 98 |
| Acetonitrile  | Methyl cyanide<br>Cyanomethane<br>Ethyl nitrile | 75-05-8    | 2  |

#### 4. First-aid measures

|   |  |
|---|--|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.  |
| <b>Skin contact</b>   | Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.   |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.  |
| <b>Ingestion</b>  | Rinse mouth. Get medical attention if symptoms occur.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Not available.   |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Patients with significant exposure to acetonitrile should be treated as for cyanide poisoning. Treatment may include the following: Vomiting usually occurs spontaneously. Do not induce vomiting. Perform gastric lavage to decontaminate or administer activated charcoal. Admit patients with potential ingestion or inhalation exposure to a hospital for at least 24 to 48 hours of observation for the development of cyanide poisoning. Toxicity may be prolonged, with clinical deterioration following initial response to antidote treatment reported for as long as 3 days following ingestion. Monitor arterial blood gasses, pulse oximetry, cardiac function, and plasma lactate levels. Correct severe metabolic acidosis with sodium bicarbonate. Correct fluid and electrolyte disturbances. Administer a cyanide antidote kit containing hydroxocobalamin or amyl nitrate, sodium nitrite, and sodium thiosulfate to patients who are significantly symptomatic with unstable vital signs, metabolic acidosis, impaired consciousness, seizures, coma, or cardiorespiratory compromise. |
| <b>General information</b>  | Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.   |

#### 5. Fire-fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).  |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.  |
| <b>Specific hazards arising from the chemical</b>                    | By heating and fire, harmful vapors/gases may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Wear suitable protective equipment.   |
| <b>Fire fighting equipment/instructions</b>                          | As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.  |
| <b>General fire hazards</b>  | Flammable liquid and vapor.   |

#### 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Wear appropriate personal protective equipment. Avoid inhalation of vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS. |
| <b>Methods and materials for containment and cleaning up</b>               | Absorb spillage with suitable absorbent material. Remove sources of ignition. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.  |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

### Precautions for safe handling

As a general rule, when handling USP materials, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.

### Conditions for safe storage, including any incompatibilities

Store in tight container. This material should be handled and stored per label instructions to ensure product integrity.

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                 | Type | Value                          |
|----------------------------|------|--------------------------------|
| Acetonitrile (CAS 75-05-8) | PEL  | 70 mg/m <sup>3</sup><br>40 ppm |

#### US. ACGIH Threshold Limit Values

| Components                 | Type | Value  |
|----------------------------|------|--------|
| Acetonitrile (CAS 75-05-8) | TWA  | 20 ppm |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Components                 | Type | Value                          |
|----------------------------|------|--------------------------------|
| Acetonitrile (CAS 75-05-8) | TWA  | 34 mg/m <sup>3</sup><br>20 ppm |

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Exposure guidelines

#### US - California OELs: Skin designation

Acetonitrile (CAS 75-05-8)

Can be absorbed through the skin.

#### US - Minnesota Haz Subs: Skin designation applies

Acetonitrile (CAS 75-05-8)

Skin designation applies.

#### US ACGIH Threshold Limit Values: Skin designation

Acetonitrile (CAS 75-05-8)

Danger of cutaneous absorption

### Appropriate engineering controls

For laboratory operations, use good technique and limit open handling. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

#### Skin protection

##### Hand protection

Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

##### Other

Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.

#### Respiratory protection

Respirators are generally not required for laboratory operations. Choose respiratory protection appropriate to the task and the level of existing engineering controls.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

Handling practices in this SDS are recommendations for laboratory use of USP materials.

## 9. Physical and chemical properties

### Appearance

Appearance descriptions are general information and not specific to any USP lot.

#### Physical state

Liquid.

|   |                 |
|---|-----------------|
| <b>Form</b>   | Liquid.         |
| <b>Color</b>  | Colorless.      |
| <b>Odor</b>   | Not available.  |
| <b>Odor threshold</b>                               | Not available.  |
| <b>pH</b>   | Not available.  |
| <b>Melting point/freezing point</b>                 | Not available.  |
| <b>Initial boiling point and boiling range</b>      | Not available.  |
| <b>Flash point</b>                                  | Not available.  |
| <b>Evaporation rate</b>                             | Not available.  |
| <b>Flammability (solid, gas)</b>                    | Not applicable. |
| <b>Upper/lower flammability or explosive limits</b> |                 |
| <b>Explosive limit - lower (%)</b>                  | Not available.  |
| <b>Explosive limit - upper (%)</b>                  | Not available.  |
| <b>Vapor pressure</b>                               | Not available.  |
| <b>Vapor density</b>                                | Not available.  |
| <b>Relative density</b>                             | Not available.  |
| <b>Solubility(ies)</b>                              |                 |
| <b>Solubility (water)</b>                           | Not available.  |
| <b>Auto-ignition temperature</b>                    | Not available.  |
| <b>Decomposition temperature</b>                    | Not available.  |
| <b>Viscosity</b>                                    | Not available.  |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport.    |
| <b>Chemical stability</b>                 | Stable at normal conditions.   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                      |
| <b>Conditions to avoid</b>                | Avoid heat, sparks, open flames and other ignition sources. Contact with incompatible materials. |
| <b>Incompatible materials</b>             | Acids. Bases. Strong oxidizing agents. Oxidizing agents. Reducing agents. Alkali metals.         |
| <b>Hazardous decomposition products</b>   | HCN. NOx. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.       |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Knowledge about health hazard is incomplete. |
| <b>Skin contact</b> | Knowledge about health hazard is incomplete. |
| <b>Eye contact</b>  | Knowledge about health hazard is incomplete. |
| <b>Ingestion</b>    | Knowledge about health hazard is incomplete. |

|   |  |
|---|--|
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b> | For acetonitrile: Gastrointestinal disturbances. Loss of appetite. Headache. Dizziness. Drowsiness. Stupor. Incoordination. Excitement. Depression. Impaired judgment. Weakness. Flushing. Yellow eyes and/or skin. Cough. Difficulty breathing. Blue or pale lips, fingernails, and skin. Chest pain. Irregular heartbeat. Convulsions. |
|---|--|

### Information on toxicological effects

|                       |   |
|-----------------------|---|
| <b>Acute toxicity</b> | Based on available data, the classification criteria are not met. |
|-----------------------|---|

| <b>Product</b>                     | <b>Species</b> | <b>Test Results</b>    |
|------------------------------------|----------------|------------------------|
| Alcohol Determination-Acetonitrile |                |                        |
| <b>Acute</b>                       |                |                        |
| <b>Dermal</b>                      |                |                        |
| LD50                               | Rabbit         | 100000 mg/kg, 24 Hours |

| Components  | Species   | Test Results   |
|---|---|--|
| Acetonitrile (CAS 75-05-8)  |   |  |
| <b>Acute</b>  |   |  |
| <b>Dermal</b>   |   |  |
| LD50  | Rabbit  | 980 mg/kg<br>390 mg/kg   |
| <b>Inhalation</b>   |   |  |
| LC50  | Rat   | 7500 ppm, 8 Hours  |
| <b>Oral</b>   |   |  |
| LD50  | Rat   | 175 mg/kg<br>158 mg/kg<br>1.73 g/kg  |
| <b>Skin corrosion/irritation</b>                                      | Based on available data, the classification criteria are not met. |  |
| <b>Serious eye damage/eye irritation</b>                              | Based on available data, the classification criteria are not met. |  |
| <b>Local effects</b>  |   |  |
| Acetonitrile  |   | Eye irritation<br>Result: Irritant.<br>Species: Rabbit<br>Test Duration: 24 Hours<br>Severity: Moderate<br>Skin irritation<br>Result: Irritant.<br>Species: Rabbit<br>Severity: Mild.                            |
| <b>Respiratory or skin sensitization</b>                              |   |  |
| <b>Respiratory sensitization</b>                                      | Knowledge about sensitization hazard is incomplete.               |  |
| <b>Skin sensitization</b>   | Based on available data, the classification criteria are not met. |  |
| Acetonitrile  |   | Buehler test<br>Result: Negative<br>Species: Guinea pig  |
| <b>Germ cell mutagenicity</b>   | Knowledge about mutagenicity is incomplete.                       |  |
| <b>Mutagenicity</b>   |   | Ames test<br>Result: Negative.<br>Mutagenicity: mutation at the HGPRT gene locus in Chinese hamster ovary cells<br>Result: Negative.   |
| Acetonitrile  |   |  |
| <b>Carcinogenicity</b>  | Based on available data, the classification criteria are not met. |  |
| Acetonitrile  |   | 200 ppm Inhalation study<br>Result: No adverse effects observed.<br>Species: Mouse<br>400 ppm Inhalation study<br>Result: Equivocal evidence in males, no evidence of carcinogenicity in females<br>Species: Rat |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>         |   |  |
| Not listed.   |   |  |
| <b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b> |   |  |
| Not listed.   |   |  |
| <b>US. National Toxicology Program (NTP) Report on Carcinogens</b>    |   |  |
| Not listed.   |   |  |
| <b>Reproductive toxicity</b>  | Based on available data, the classification criteria are not met. |  |
| <b>Reproductivity</b>   |   | 100 - 400 mg/kg/day Reproductivity / developmental<br>Result: Maternal toxicity and skeletal malformations<br>Species: Hamster   |
| Acetonitrile  |   |  |

**Reproductivity**

Acetonitrile

125 - 275 mg/kg/day Reproductivity / developmental  
 Result: Maternal toxicity and embryo toxicity at high dose; no  
 teratogenicity observed  
 Species: Rat

**Specific target organ toxicity - single exposure** Knowledge about health hazard is incomplete.

**Specific target organ toxicity - repeated exposure** Knowledge about health hazard is incomplete.

**Aspiration hazard** Knowledge about health hazard is incomplete.

**12. Ecological information**

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Components                 | Species  | Test Results         |
|----------------------------|--|----------------------|
| Acetonitrile (CAS 75-05-8) |  |                      |
| <b>Aquatic</b>             |  |                      |
| Crustacea                  | LC50 Water flea ( <i>Daphnia magna</i> )           | 3600 mg/l, 48 hours  |
| Fish                       | LC50 Fathead minnow ( <i>Pimephales promelas</i> ) | > 100 mg/l, 96 hours |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential****Octanol/water partition coefficient log Kow**

Acetonitrile -0.34

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**13. Disposal considerations**

**Disposal instructions** Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.  
 U003: Waste Acetonitrile  
 D001: Waste Flammable material with a flash point <140 F

**Waste from residues / unused products** Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**14. Transport information****DOT**

**UN number** UN1993  
**UN proper shipping name** Flammable liquids, n.o.s. (Acetonitrile solution)  
**Transport hazard class(es)**  
**Class** 3  
**Subsidiary risk** -  
**Packing group** III  
**Packaging exceptions** 150  
**Packaging non bulk** 202  
**Packaging bulk** 242

**IATA**

**UN number** UN1993  
**UN proper shipping name** Flammable liquid, n.o.s. (Acetonitrile solution)  
**Transport hazard class(es)**  
**Class** 3  
**Subsidiary risk** -  
**Packing group** III

**Other information**

**Passenger and cargo aircraft** Allowed with restrictions.

**Cargo aircraft only** Allowed with restrictions.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

**DOT**



**IATA**



**General information**

It is the shipper's responsibility to determine the correct transport classification at the time of shipment.

**15. Regulatory information**

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Acetonitrile (CAS 75-05-8) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Flammable (gases, aerosols, liquids, or solids)

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| Acetonitrile  | 75-05-8    | 2        |

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Acetonitrile (CAS 75-05-8)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.**US state regulations****California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Acetonitrile (CAS 75-05-8)

**International Inventories**

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | No                     |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision****Issue date** 02-18-2013**Revision date** 06-22-2021**Version #** 06

**Disclaimer** USP materials are sold for analytical laboratory use only, and NOT for human consumption. The information contained herein is applicable solely to the chemical substance when used for analytical laboratory use and does not necessarily relate to any other use of the substance described, (i.e. at different concentrations, in drug dosage forms, or in bulk quantities). USP materials are intended for use by persons having technical skill and at their own discretion and risk. This information has been developed by USP staff from sources considered reliable but has not been independently verified by the USP. Therefore, the USP Convention cannot guarantee the accuracy of the information in these sources nor should the statements contained herein be considered an official expression. NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE is made with respect to the information contained herein.