

Material Safety Data Sheets (MSDS)

Acetonitrile

Identification of Product

Chemical Code: CHE-A9

Chemical Name: Acetonitrile

Chemical Grade: HPLC

Chemical Formula: CH₃CN

Chemical Weight: 41.05 g/mol

CAS No: 75-05-8

Chemical Synonyms: Methyl Cyanide,
ACN.

Hazards Identification

REACH No: 01-2119471307-38-XXXX

Signal Word: Danger

Supplemental Hazard Information:

Additional Hazard Information: This substance contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.



Hazards statements

H225 - Highly flammable liquid and vapour.

H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.

H319 - Causes serious eye irritation.

Precautionary statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 - Wear protective gloves/ protective clothing.

P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

P302 + P352 + P312 - IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.

P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Composition of Chemical

Chemical Formula: CH₃CN

EC No 1272/2008: 01-2119471307-38-XXXX

First Aid Measures

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

If: Inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If: Skin Contact: Wash off with soap and plenty of water. Consult a physician.

If: Eye Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If: Swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Important Symptoms: The most important known symptoms and effects are described in the labelling section.

Immediate Medical Attention: No Data Available

Firefighting Measures

Extinguishing Media: Use Water spray, Alcohol-resistant foam, Dry chemical or Carbon Dioxide.

Hazards Arising: Carbon Oxides, Nitrogen Oxides

Advice for Firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Info for Firefighting: Use water spray to cool unopened containers.

Accidental Release Measures

Personal Precautions: Use personal protective equipment.

Avoid breathing vapours, mist or gas.

Ensure adequate ventilation.

Remove all sources of ignition.

Evacuate personnel to safe areas.

Beware of vapours accumulating to form explosive concentrations.

Vapours can accumulate in low areas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so.

Do not let product enter drains.

Method for Containment: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

Handling and Storage

Personal Precautions: Avoid contact with skin and eyes.

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking.

Take measures to prevent the build up of electrostatic charge.

Environmental Precautions: Store in cool place.

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Exposure Controls | Personal Protection

Derived No Effect Level (DNEL)

Workers | Application Area | Exposure Routes | Health Effect | Value

Workers - Inhalation - Acute local effects - 68 mg/m³

Workers - Inhalation - Acute systemic effects - 68 mg/m³

Workers - Skin contact - Long-term systemic effects - 32.2mg/kg BW/d

Workers - Inhalation - Long-term local effects - 68 mg/m³

Workers - Inhalation - Long-term systemic effects - 68 mg/m³

Consumers | Application Area | Exposure Routes | Health Effect | Value

Consumers - Inhalation - Acute local effects - 220 mg/m³

Consumers - Inhalation - Acute systemic effects - 22 mg/m³

Consumers - Inhalation - Long-term systemic effects - 4.8 mg/m³

Predicted No Effect Concentration (PNEC)

Water - 10 mg/L

Soil - 2.41 mg/Kg

Marine water - 1 mg/L

Fresh water - 10 mg/L

Fresh water sediment - 7.53 mg/Kg

Onsite sewage treatment plant - 32 mg/L

Engineering Controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Eye/Face Protection: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: butyl-rubber. Minimum layer thickness: 0,3 mm

Break through time: 480 min. Material tested: Butoject®

Splash contact

Material: butyl-rubber. Minimum layer thickness: 0,3 mm

Break through time: 480 min. Material tested: Butoject®

Data source: KCL GmbH, D-36124, Test method: EN 374.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection: Complete suit protecting against chemicals. Flame retardant anti-static protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator with multi-purpose combination, type OV/AG (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Physical and Chemical Properties

Appearance: Clear, Colourless liquid

Odour: Ether-like

Odour Threshold: No Data Available

pH: No Data Available

Melting Point: Melting point/range: - 48°C (lit).

Boiling Point: 81 - 82°C (lit).

Flash Point: 6.0°C (closed cup)

Evaporation: 5.8

Flammability: No Data Available

Upper/Lower Flammability or Explosive Limits: Upper explosion limit: 16% (V),
Lower explosion limit: 3% (V).

Vapour pressure: 98.64 hPa at 20°C,

Vapour density: 1.42 - (Air = 1.0)

Relative density: 0.786 g/cm³ at 25°C

Water solubility: Completely Miscible

Partition Coefficient: log Pow: - 0.54 at 25°C

Auto-ignition Temperature: 524.0°C

Decomposition Temperature: No Data Available

Viscosity: No Data Available

Explosive properties: No Data Available

Oxidizing properties: No Data Available

Other Safety Info: Surface tension - 29.0 mN/m at 20.0°C

Relative vapour density - 1.42 - (Air = 1.0)

Stability and Reactivity

Reactivity: No Data Available

Chemical Stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No Data Available

Conditions to Avoid: Heat, flames and sparks.

Extremes of temperature and direct sunlight.

Incompatible Materials: Acids, Bases, Oxidizing agents, Reducing agents, Alkali metals

Hazardous Decomposition Products: Hazardous decomposition products formed under fire conditions - Carbon Oxides, Nitrogen Oxides.

Toxicological Information

Acute Toxicity: LD50 Oral - Mouse - male and female - 617 mg/kg - (OECD Test Guideline 401).

LC50 Inhalation - Mouse - male and female - 4 h - 6,022 mg/l - (OECD Test Guideline 403).

Inhalation: (Regulation (EC) No 1272/2008, Annex VI)

LD50 Dermal - Rabbit - male and female - > 2.000 mg/kg - (OECD Test Guideline 402)

Dermal: (Regulation (EC) No 1272/2008, Annex VI)

Skin Corrosion/Irritation: Rabbit -

Result: No skin irritation - 4 h - (OECD Test Guideline 404)

Serious Eye damage | Eye Irritation: Rabbit

Result: Eye irritation - (OECD Test Guideline 405)

Cell Mutagenicity: Ames test:

S. typhimurium - Result: negative

In vitro mammalian cell gene mutation test:

Chinese hamster ovary cells - Result: negative.

Mutagenicity (mammal cell test): chromosome aberration -

Chinese hamster ovary cells - Result: Positive results were obtained in some in vitro tests (National Toxicology Program).

Sister chromatid exchange assay:

Chinese hamster ovary cells - Result: negative

Sister chromatid exchange:

Saccharomyces cerevisiae - Result: positive - Cytogenetic analysis (ECHA)

In vitro mammalian cell gene mutation test:

Mouse lymphoma test - Result: negative - OECD Test Guideline 474

Mouse - male and female - Result: negative

Carcinogenicity: No evidence of carcinogenicity in animal studies.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity: Animal testing did not show any effects on fertility.

Specific Target Organ Toxicity - Single Exposure: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Toxicity - Repeated Exposure: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration Hazard: No Data Available

Ecological Information

Ecological Toxicity: Toxicity to fish:

Flow-through test LC50 - Pimephales promelas (fathead minnow) - 1.640 mg/l - 96 h - Remarks: (ECHA).

Toxicity to daphnia and other aquatic invertebrates:

Static test LC50 - Artemia salina (Brine shrimp) - 400 mg/l - 24 h - Remarks: (ECHA).

Toxicity to algae:

Static test NOEC - Phaeodactylum tricornutum - 400 mg/l - 72 h - (ISO 10253).

Static test ErC50 - Phaeodactylum tricornutum - 9.696 mg/l - 72 h - (ISO 10253).

Toxicity to bacteria:

Static test EC50 - activated sludge - > 1.000 mg/l - 30 min - (OECD Test Guideline 209).

Ecological Persistence and degradability: Biodegradability Result: 70% - Readily biodegradable (OECD Test Guideline 301)

Bioaccumulative Potential: No bio-accumulation is to be expected (log Pow ? 4)

Mobility in Soil: Not expected to adsorb on soil

Results of PBT and vPvB Assessment: This substance contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.

Other Adverse Effect: Avoid release to the environment.

Stability in water:

Remarks: Hydrolyses slowly

Disposal Considerations

Waste Treatment Methods: Product -

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging - Dispose of as unused product.

Transport Information

UN Number: ADR/RID: 1648

IMDG: 1648

IATA: 1648

UN Shipping Hazard: ADR/RID: Acetonitrile

IMDG: Acetonitrile

IATA: Acetonitrile

Transport Hazard Class: ADR/RID: 3

IMDG: 3

IATA: 3

Packaging Group: ADR/RID: II

IMDG: II

IATA: II

Environmental Hazards: ADR/RID: no

IMDG Marine pollutant: no

IATA: no

Special Precautions: No Data Available

Regulatory Information

Safety, Health and environmental regulations: This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical Safety Assessment: A Chemical Safety Assessment has been carried out for this substance.

Additional Info: RTECS: AL7700000

Treat as Cyanide poisoning.

Always have on hand a Cyanide first-aid kit, together with proper instructions.

The onset of symptoms is generally delayed pending conversion to Cyanide.

Nausea, vomiting, diarrhoea, headache, dizziness, rash, cyanosis, excitement, depression, drowsiness, impaired judgment, lack of coordination, stupor and death.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Disclaimer

The information stated above is considered to be correct, but does not claim to be inclusive and shall only be used as a guideline. The information provided by this document is confirmed by our continuous updating of knowledge and adheres to the products appropriate safety precautions. It does not represent any guarantee of the product's properties. RLS Chemicals and its Associates shall not be held accountable for any damage's consequent of handling the above product.
