

## Chemical Safety Data Sheet MSDS / SDS

## Acetonitrile

Revision Date:2025-01-11 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Acetonitrile  
CBnumber : CB2127174  
CAS : 75-05-8  
EINECS Number : 200-835-2  
Synonyms : acetonitrile,ACN

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

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

Continuerinsing.

P307+P311 IF exposed: call a POISON CENTER or doctor/physician.

P337+P313 IF eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use ... for extinction.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container to.....

#### **Hazard statements**

H225 Highly Flammable liquid and vapour

H302 Harmful if swallowed

H311 Toxic in contact with skin

H312 Harmful in contact with skin

H319 Causes serious eye irritation

H332 Harmful if inhaled

H336 May cause drowsiness or dizziness

H341 Suspected of causing genetic defects

H370 Causes damage to organs

H373 May cause damage to organs through prolonged or repeated exposure

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Acetonitrile
Synonyms	: acetonitrile,ACN
CAS	: 75-05-8
EC number	: 200-835-2
MF	: C <sub>2</sub> H <sub>3</sub> N
MW	: 41.05

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

#### **Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **Indication of any immediate medical attention and special treatment needed**

No data available

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## SECTION 5: Firefighting measures

### **Extinguishing media**

#### **Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### **Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Carbon oxides Nitrogen oxides (NO<sub>x</sub>) Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

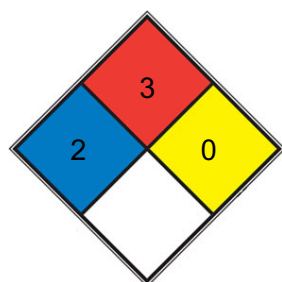
### **Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **Further information**

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### **NFPA 704**



■ HEALTH 2 Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl](#)

[ether](#), ammonium phosphate, iodine)

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		Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature
<input checked="" type="checkbox"/> FIRE	3	conditions . Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, <a href="#">acetone</a> )

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<input checked="" type="checkbox"/> REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, <a href="#">N2</a> )
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<input type="checkbox"/> SPEC.		
<input type="checkbox"/> HAZ.		

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### Environmental precautions

Do not let product enter drains. Risk of explosion.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb? ). Dispose of properly. Clean up affected area.

### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

#### Advice on safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Filled under nitrogen. **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

## Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

## Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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# SECTION 8: Exposure controls/personal protection

## control parameter

### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

## Exposure controls

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject? (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Chloroprene

Minimum layer thickness: 0,65 mm Break through time: 10 min

Material tested: KCL 720 Camapren?

#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

## Exposure limits

TLV-TWA 70 mg/m<sup>3</sup> (40 ppm) (ACGIH and OSHA); STEL 105 mg/m<sup>3</sup> (60 ppm) (ACGIH); IDLH 4000 ppm (NIOSH).

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	colorless clear, liquid
Odour	ether-like
Odour Threshold	39,8 ppm
pH	No data available
Melting point/freezing point	Melting point/range: -48 °C - lit.
Initial boiling point and boiling range	81 - 82 °C - lit.
Flash point	2,0 °C - closed cup
Evaporation rate	5,8
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 16 %(V) Lower explosion limit: 4,4 %(V)
Vapour pressure	98,64 hPa at 20 °C
Vapour density	1,42 - (Air = 1.0)
Relative density	approximate 0.78(20/20°C)
Water solubility	1.000 g/l at 25 °C completely soluble
Partition coefficient: n-octanol/water	log Pow: -0,54 at 25 °C - Bioaccumulation is not expected.
Autoignition temperature	524,0 °C
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0,350 Pas at 20,00 °C
Explosive properties	No data available
Oxidizing properties	No data available
Henry's Law Constant	7.30 at 5 °C, 8.90 at 10 °C, 11.6 at 15 °C, 14.6 at 20 °C, 17.6 at 25 °C (headspace-GC, Ji and Evans, 2007)
$\lambda_{\text{max}}$	$\lambda$ : 195 nm Amax: $\leq 0.12$ $\lambda$ : 200 nm Amax: $\leq 0.032$ $\lambda$ : 230 nm Amax: $\leq 0.0044$ $\lambda$ : 235 nm Amax: $\leq 0.0044$ $\lambda$ : 250 nm Amax: $\leq 0.0044$ $\lambda$ : 400 nm Amax: $\leq 0.0044$

### Other safety information

Surface tension 29,0 mN/m at 20,0 °C

Relative vapor density

1,42 - (Air = 1.0)

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## SECTION 10: Stability and reactivity

## Reactivity

Vapors may form explosive mixture with air.

## Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## Possibility of hazardous reactions

Violent reactions possible with:

Strong bases

strong reducing agents Risk of explosion with:

nitrates perchlorates perchloric acid conc. sulfuric acid with

Heat.

Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents

Nitric acid nitrogen dioxide with

Catalyst

Generates dangerous gases or fumes in contact with: Acids

## Conditions to avoid

Warming.

## Incompatible materials

rubber, various plastics, Strong oxidizing agents

## Hazardous decomposition products

In the event of fire: see section 5

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# SECTION 11: Toxicological information

## Information on toxicological effects

### 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)

Acute toxicity estimate Dermal - 1.500 mg/kg (Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute toxicity estimate Dermal - 1.500 mg/kg (Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

### Skin corrosion/irritation

Skin - Rabbit

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

### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation. (OECD Test Guideline 405)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### **Respiratory or skin sensitization**

Buehler Test - Guinea pig Result: negative

(OECD Test Guideline 406)

#### **Germ cell mutagenicity**

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation Result: negative

Remarks: (ECHA)

Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation Method: US-EPA

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation Result: Positive results were obtained in some in vitro tests. Remarks: (National Toxicology Program)

Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: Metabolic activation Result: negative

Remarks: Sister chromatid exchange Test system: *Saccharomyces cerevisiae*

Metabolic activation: without metabolic activation Result: positive

Remarks: Cytogenetic analysis

(ECHA)

Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

Test Type: Micronucleus test Species: Mouse

Application Route: Intraperitoneal Method: OECD Test Guideline 474 Result: negative

#### **Carcinogenicity**

No data available

#### **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.

No aspiration toxicity classification

#### **Toxicity**

LD50 orally in rats: 3800 mg/kg (Smyth)

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## SECTION 12: Ecological information

### **Toxicity**

#### **Toxicity to fish**



flow-through test LC50 - Pimephales promelas (fathead minnow) - 1.640 mg/l - 96 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**

#### **Persistence and degradability**

Biodegradability Result: 70 % - Readily biodegradable.

(OECD Test Guideline 310)

#### **Bioaccumulative potential**

No bioaccumulation is to be expected ( $\log Pow \leq 4$ ).

#### **Mobility in soil**

Not expected to adsorb on soil.

#### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### **Toxics Screening Level**

The screening level for acetonitrile (ACN) is as follows: ITSL = 200 µg/m<sup>3</sup>, annual averaging time (AT).

#### **Other adverse effects**

Avoid release to the environment.

Stability in water DT50 - > 9.999 d pH 7 at 25 °C

Remarks: (calculated)Hydrolyzes slowly.

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## **SECTION 13: Disposal considerations**

#### **Waste treatment methods**

##### **Incompatibilities**

Incompatible with oxidizers (chlorates, nitrates, peroxides, permanganates, perchlorates, chlorine, bromine, fluorine, etc.); contact may cause fires or explosions. Keep away from alkaline materials, strong bases, strong acids, oxoacids, chlorosulfonic acid, oleum, epoxides. May accumulate static electrical charges, and may cause ignition of its vapors.

##### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

##### **Waste Disposal**

Consult with environmental regulatory agencies for guidance on acceptable disposal practices. Generators of waste containing this contaminant (≥100 kg/mo) must conform with EPA regulations governing storage, transportation, treatment, and waste disposal. Incineration

with nitrogen oxide removal from effluent gases by scrubbers or incinerators

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## SECTION 14: Transport information

### UN number

ADR/RID: 1648 IMDG: 1648

### UN proper shipping name

ADR/RID: ACETONITRILE IMDG: ACETONITRILE IATA: Acetonitrile

### Transport hazard class(es)

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 for user

No data available

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## SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015: Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC): Listed. website: <https://www.mee.gov.cn/>

EC Inventory: Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS): Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL): Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC): Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed. website: <https://emb.gov.ph/>

United States Toxic Substances Control Act (TSCA) Inventory: Listed. website: <https://www.epa.gov/>

Vietnam National Chemical Inventory: Listed. website: <https://chemicaldata.gov.vn/>

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## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

## References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

## Other Information

Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Oxygen should be administered exclusively by specially trained first aid or medical personnel. Do NOT take working clothes home.

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.