

IMPERIAL CHEMICAL CORPORATION

SAFETY DATA SHEET

according to Regulation(EC) No. 1907/2006

Revision Date 24.05.2021

Version 4.6

1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product name : Acetonitrile
Chemical name : Methyl Cyanide
REACH registration No. : 01-2119471307-38-0023

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

General uses : Solvent, analytical reagent

1.3 Details of the supplier of the safety data sheet

Company name : Imperial Chemical Corp.
Address : No.3, Hsing Kung Rd., Ta-She Dist., Kaohsiung, Taiwan R.O.C., 81567
Telephone : 886-7-3513724
Fax : 886-7-3523550
Email : service@impechem.com
website : www.impechem.com

1.4 Emergency telephone number

Emergency Phone : 886-7-3513724

2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008 [EU-GHS/CLP]

Flammable liquids (Category 2)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Acute toxicity, Oral (Category 4)
Eye irritation (Category 2)

Classification according to EU Directive 67/548/EEC or 1999/45/EC

Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word

Danger

Hazard statement(s)

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H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces.-No smoking.

P280 Wear protective gloves/protective clothing.

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

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)



R-phrases(s)

R11 Highly flammable

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R36 Irritating to eyes.

S-phrases(s)

S16 Keep away from sources of ignition.-No smoking.

S36/37 Wear suitable protective clothing and gloves.

2.3 **Other hazards**

none

3. **Composition/Information on Ingredients**

Chemical Formula : CH₃CN

Molecular Weight : 41,05 g/mol

CAS-NO. : 75-05-8

EC-NO. : 200-835-2

This product is highly flammable and toxic substance.

4. **First Aid Measures**

4.1 **Description of first aid measures**

After eye contact

Immediately and gently flush the affected eye(s) well with copious amount of clean water for 15 minutes.

Seek medical attention immediately.

After skin contact

Immediately remove the contaminated clothing and shoes from the victim. Immediately wash affected area thoroughly with soap and water. Seek medical attention immediately.

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After inhalation

Remove the victim to fresh air immediately. Keep him warm with blankets or the like and at rest. Seek medical attention immediately. If not breathing, give artificial respiration immediately. If breathing is difficult, give oxygen.

After swallowing

Immediately make victim drink water(two glasses at most). Consult a physician.

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

Irritant effects, Nausea, Vomiting, Convulsions, Shortness of breath, Unconsciousness, respiratory arrest, cardiac arrest

May cause headache and dizziness.

Note : When seeking medical attention by a physician, provide this SDS and other information regarding this material.

5. **Fire-fighting Measures**

5.1 **Extinguishing media**

Suitable extinguishing media

Dry chemical powder, foam, carbon dioxide and spray water are effective.

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

Combustible material, Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of:

nitrogen oxides, hydrogen cyanide(hydrocyanic acid)

5.3 **Advice for firefighters**

Special protective equipment for fire-fighters

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)

gaese/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. **Accidental Release Measures**

6.1 **Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentration. Vapours can accumulate in low areas.

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6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

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.

7. Handling and Storage

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing.

Avoid breathing vapor, mist and gas.

Keep away from ignition sources, static electricity, spark and others.

Prevent generation of static electricity. Clothing and work shoes must be electroconductive.

Keep away from incompatible materials including oxidizing materials.

Always keep the container closed to be airtight, and provide local exhaust ventilation.

Avoid tumbling, dropping, dragging or other violent handling of the container.

Pay attention to the management of empty containers as well.

After handling, wash hands thoroughly, and change the contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Keep away from direct sunlight.

Keep them at a well-ventilated cool, dark place.

Avoid raising the temperature of the storage tank by spraying water over, if needed.

Store under each country's regulations.

7.3 Specific and uses

See exposure scenario in the Annex to this SDS.

8. Exposure Controls/ Personal Protection

8.1 Control parameters

Components with workplace control parameters

Components

Basis	Value	Threshold limits	Ceiling Limit Value; Remarks
Acetonitrile (75-05-8)			
ECTLV	Skin designation:		Can be absorbed through the skin.
	Time Weighted Average (TWA):	40 ppm	
		70 mg/m ³	
EH40 WEL	Short Term Exposure Limit(STEL):	60 ppm	
		102 mg/m ³	
	Time Weighted Average (TWA):	40 ppm	
		68 mg/m ³	

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Derived No Effect Level (DNEL)

Worker DNEL, acute	Systemic effects	inhalation	68 mg/m ³
Worker DNEL, acute	Local effects	inhalation	68 mg/m ³
Worker DNEL, long-term	Systemic effects	dermal	32.2 mg/kg Body weight
Worker DNEL, long-term	Systemic effects	inhalation	68 mg/m ³
Worker DNEL, long-term	Local effects	inhalation	68 mg/m ³
Consumer DNEL, acute	Systemic effects	inhalation	220 mg/m ³
Consumer DNEL, acute	Systemic effects	oral	0.6 mg/kg Body weight
Consumer DNEL, acute	Local effects	inhalation	22 mg/m ³
Consumer DNEL, long-term	Systemic effects	inhalation	4.8mg/m ³
Consumer DNEL, long-term	Local effects	inhalation	4.8mg/m ³

Recommended monitoring procedures

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	10 mg/L
PNEC Marine water	1 mg/L
PNEC Aquatic intermittent release	10 mg/L
PNEC Fresh water sediment	7.53 mg/kg
PNEC Soil	2.41 mg/kg
PNEC Sewage treatment plant	32 mg/L

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

- Eye/face protection : Tightly fitting safety goggles.
- Skin protection : Rubber boots and rubber clothing.
- Respiratory protection : Air-purifying respirator with an organic vapor cartridge or canister should be used. Protection provided by air-purifying respirators is limited. Use a positive-pressure air-supplied respirators if there is any potential for uncontrolled release, exposure levels are unknown, or in any other circumstances where air-purifying respirators may not be adequate protection.

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9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a) Appearance	Transparent liquid
b) Color	Colorless
c) Odor	Like Ether
d) Odor threshold level	170ppm
e) Physical state	Liquid
f) Boiling point	81.6 °C (1 atm)
g) Refractive Index	1.3442 (20 °C)
h) Flash point	5.6 °C (open cup), 12.8 °C (closed cup)
i) Flammable Limits in air-lower	3.0 (vol. %, 25 °C 1-atm)
j) Flammable Limits in air- upper	16.0 (vol. %, 25 °C 1-atm)
k) Vapor pressure	93.8hPa (20°C)
l) Melting point	-45.7 °C
m) Specific gravity	0.783 (20°C)
n) Vapor density	1.42 (air=1)
o) Viscosity	0.375 _{cp} at 15°C
p) Solubility	1000000 mg/L water
q) pH	No information available

10. Stability and Reactivity

- 10.1 **Reactivity** : Vapor may form explosive mixture with air.
- 10.2 **Chemical stability** : Stable under recommended storage and handling conditions.
May form flammable/explosive vapor-air mixture.
- 10.3 **Possibility of hazardous reactions** : Violent reactions possible with:
Oxidizing agents, perchloric acid, fuming sulfuric acid, conc. Sulfuric acid, acids.
- 10.4 **Conditions to avoid** : Tumbling, dropping and dragging or other violent handling of the container. Keep away from direct sunlight, ignition sources and oxidizing materials.
- 10.4 **Incompatible materials** : Rubber, various plastics, acids, bases, nitrating agents, nitrogen-fluorine compounds, oxidizers, perchlorates, and sulphites.
- 10.5 **Hazardous decomposition products** : Decomposition products may include the following material: carbon oxide(CO, CO₂), nitrogen oxides (NO, NO₂ etc), Hydrogen cyanide(HCN)
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11. Toxicological Information

11.1 Information on toxicological effects

Acute oral toxicity	: LD50: 617 mg/kg bw (mouse, male/female) OECD Test Guideline 401 LDLo: 300 mg/kg bw (hamster, female) Acute symptoms : Headache, nausea, feeling of exhaustion, dizziness, respiration trouble and diarrhea.
Acute inhalation toxicity	: LC50(4h): 3,587 ppm(6022 mg/m ³) (mouse, male/female) OECD Test Guideline 403 Acute symptoms : Headache, dizziness
Acute dermal toxicity	: LD50: >2,000 ppm (rabbit, male/female) OECD Test Guideline 402
Absorption	
Skin irritation	: No skin irritation(rabbit) OECD Test Guideline 404
Eye irritation	: Eye irritation(rabbit) OECD Test Guideline 405 Cause serious eye irritation.
Sensitisation	: Does not cause skin sensitization.(guinea pig) OECD Test Guideline 406 No skin-sensitising effect
Genotoxicity in vivo	: In vivo micronucleus test (mouse) Result: negative OECD Test Guideline 407
Genotoxicity in vitro	: Ames test Salmonella typhimurium strains Result: negative
Mutagenicity (mammal cell test)	: chromosome aberration. Result: positive results were obtained in some in vitro test. (US National Toxicology Program)
Mutagenicity (mammal cell test)	: Mouse Lymphoma test Result: negative OECD Test Guideline 476
Carcinogenicity	: No effects (rat) (US National Toxicology Program)

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Specific target organ toxicity- single exposure:

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity- repeat exposure:

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

12. Ecological Information

12.1 Toxicity

Toxicity to fish	The acute toxicity of acetonitrile to fish has been studied in several freshwater species. Reported LC50 values range from 730 mg/L to 7050 mg/L. 96-hour LC50 1640 mg/L Pimephales promelas (Fathead minnow). 48-hour TLm 730 mg/L Oryzias latipes (Medaka, high-eyes) 48-hour LC50 >1000 mg/L Oryzias latipes (Medaka, high-eyes)
Toxicity to daphnia and other aquatic invertebrates	LC50 values range from 400 mg/L to 8250 mg/L. T 48 hr LC50 521 mg/L Artemia salina larvae
Acute Toxicity to Algae	48-hr EC50 in the green algae Raphidocelis subcapitata 7943 mg/L. 72 hr ErC50(growth rate) 9696 mg/L marine algae (Phaeodactylum tricorutum)
Chronic Toxicity to Fish	21 -day NOEC >102 mg/L Oryzias latipes
Biodegradation	The substance is readily biodegradable

12.2 Persistence and degradability

Theoretical Oxygen Demand with nitrification: 2,923 mg/mg

Theoretical Oxygen Demand : 1,559 mg/mg

Theoretical Carbon Dioxide : 2,144 mg/mg

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water Log Pow: -0.34(pH value:~7, 25°C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

13. Disposal Considerations

13.1 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 solution to a licensed disposal company.

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14. **Transport Information**

14.1 **UN number**

ADR/RID: 1648

IMDG: 1648

IATA: 1648

14.2 **UN proper shipping name**

ADR/RID: ACETONITRILE

IMDG: ACETONITRILE

IATA: Acetonitrile

14.3 **Transport hazard class(es)**

ADR/RID: 3

IMDG: 3

IATA: 3

Prior to the transportation of this material in tank trucks or tank cars, thoroughly check outlets valves, flange surfaces, and safety valves for normality, to prevent leak and spill during transportation.

For transportation in drums and other containers, make sure in advance that they are closed airtightly and free from any liquid or gas leak.

Keep safety implements required for the transportation ready in the vehicles.

The safety implements include

- 1) a paper presenting the properties of this material and the mitigation method of an accident.
- 2) protectors including chemical cartridge respirators, rubber glove and rubber boots, fire extinguishers, implements such as sand, pieces of old cloth, rope and polyethylene buckets and contact route in emergency, certificates and others.

Piping, pumps and vehicles for the loading and unloading of this material must be grounded to prevent the accumulation of electrostatic charges.

Comply with the laws and regulations concerning the transportation and storage of the dangerous materials

14.4 **Packing Group**

ADR/RID: II

IMDG: II

IATA: II

15. **Regulatory Information**

This safety datasheet complies with the requirements of regulation (EC) No. 1907/2006

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16. Other Information

Note : This information furnished in this Safety Data Sheet is accurate to the best knowledge of Imperial Chemical Corporation ("ICC") as of the date of its publication. This SDS is not intended to create any liability of any kind on the parts of ICC. In no event will ICC be responsible for any death, injury or damage of any nature resulting from the use of, reliance upon, or misuse of the SDS or material to which it refers. The data on this sheet relates only to the specific material designated herein. No representation or warranties, whether express or implied, of merchantability, fitness for particular purpose, or any other nature, are made hereunder. This SDS is not intended as a recommendation for uses that infringe valid patents or extended licenses under valid patents. This SDS is furnished under the express condition that all persons receiving it will make their own determination as to its suitability for their purpose prior to use.

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