

Safety Data Sheet

1. Chemical product and company identification

Product name : Propionitrile

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
 Name of section : Business Administration Department, Reagent Division
 Telephone number : +81-3-6214-1090
 Facsimile number : +81-3-3241-1047
 Mail address : BC32@kanto.co.jp
 Reference No : 32130
 Recommended use : For research use only
 Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity (oral)	Category 2
	Acute toxicity (dermal)	Category 2
	Acute toxicity (inhalation:vapors)	Category 1
	Serious eye damage/eye irritation	Category 2
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (systemic toxicity, central nervous system)

Hazard pictograms



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor
 Fatal if swallowed, in contact with skin or if inhaled
 Causes serious eye irritation
 May damage fertility or the unborn child
 Causes damage to organs (systemic toxicity, central nervous system)

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.



	Use only non-sparking tools. Take action to prevent static discharges. Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. [In case of inadequate ventilation] wear respiratory protection.
Response	: IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN: Wash with plenty of water. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTER or doctor. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor. Rinse mouth. If eye irritation persists: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse.
Storage	: Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture	: Substance
Synonyms	: Propanenitrile

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Propionitrile	≥ 99	C ₃ H ₅ N	Listed	203-464-4	107-12-0

4. First aid measures

First aid measures

First-aid measures after inhalation	: Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.
First-aid measures after skin contact	: Wash the affected areas under running water.
First-aid measures after eye contact	: Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.
First-aid measures after ingestion	: The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical



attention immediately. If necessary, rinse mouth with water.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam

Unsuitable extinguishing media : Foam extinguisher

Fire hazard : Gives off irritating or toxic fumes in a fire. Vapour/air mixtures are explosive.

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response) : Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment : Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.

Prevention Measures for Secondary Accidents : Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.

Ventilate well at working places.

Prevent build-up of electrostatic charges (e.g. by grounding) .

Precautions for safe handling : Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.

Do not allow contact with oxidizing substances.

Storage

Storage conditions : Store in a dark, cool place and tightly closed.



The inside of the container should be replaced with inert gas.

Material used in : Glass, fluorine resin, stainless steel.
packaging/containers : Do not use polyvinyl chloride resin, polystyrene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established.
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Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : Chemical cartridge respirator with an organic vapor cartage or airline respirator

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Liquid

Color : Colorless.

Odor : Ethereal

pH : No data available

Melting point : -92 ° C

Freezing point : No data available

Boiling point : 97 ° C

Flash point : 2 ° C (C.C.)

Auto-ignition temperature : 510 ° C

Decomposition temperature : No data available

Flammability : Flammable

Vapor pressure : 5.2 kPa (20°C)

Relative density : No data available

Density : 0.802 g/cm³ (0°C)

Relative gas density : 1.9

Solubility : Organic solvents: Miscible with ethanol, diethyl ether, etc.
Water: 10 g/100mL (20°C)

Partition coefficient n-octanol/water (log Pow) : 0.16

Explosive limits (vol %) : ≥ 3.1 vol %

Viscosity, kinematic : No data available

Particle characteristics : No data available

10. Stability and reactivity

Reactivity : Reacts with strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Risk of fire and explosion on contact with strong oxidants.
When heated to decomposition, it emits toxic fumes of nitrogen



	oxides and cyanide.
Conditions to avoid	: Light, heat.
Incompatible materials	: Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.
Hazardous decomposition products	: Carbon monoxide, nitrogen oxides, hydrogen cyanide.

11. Toxicological information

Acute toxicity (oral)	: Fatal if swallowed rat LD50=39 mg/kg
Acute toxicity (dermal)	: Fatal in contact with skin rabbit LD50=163.8 mg/kg
Acute toxicity (inhalation)	: No classification (gas) Fatal if inhaled (vapor) mouse LC50=81.5 ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	: No classification Based on the statements that "no severe injury occurred" in a test applied to rabbit skin and that the substance was "slightly irritating" in guinea pigs, it was classified as "No classification".
Serious eye damage/irritation	: Causes serious eye irritation Based on the statement that the substance is "irritating to the eyes" in humans and the statement that "no severe damage occurred" in a study in which the substance was applied to the eyes of rabbits, it was classified into category 2.
Respiratory sensitization	: Classification not possible
Skin sensitization	: Classification not possible
Germ cell mutagenicity	: Classification not possible
Carcinogenicity	: No classification In the Ministry of Health, Labour and Welfare's Carcinogenicity Study, "In a 104-week inhalation exposure study in rats and mice, administration of propionitrile did not increase the incidence of tumors in F344/DuCr1Cr1j (Fischer) rats in both males and females, and no evidence of carcinogenicity was found. In B6D2F1/Cr1j mice, there was no increased incidence of tumors in either sex and no evidence of carcinogenicity. Therefore, it was classified as "No classification".
Reproductive toxicity	: May damage fertility or the unborn child In an inhalation developmental toxicity study in rats, embryonic lethality and fetotoxicity were observed at doses that were not toxic to the parent animals; therefore, it was classified into category 1B.
STOT-single exposure	: Causes damage to organs (systemic toxicity, central nervous system) In humans, workers have been reported to have taken in this substance through the skin and respiratory tract, causing loss of consciousness, respiratory alkalosis, and mild metabolic acidosis, and two workers have been reported to have inhaled this substance, one complaining of headache, nausea, and dizziness after 2 hours and the other collapsing after 7 hours; therefore, it was classified into category 1 (systemic toxicity, central nervous system).
STOT-repeated exposure	: Classification not possible
Aspiration hazard	: Classification not possible



12. Ecological information

Ecotoxicity

Aquatic acute : No classification
Fathead minnow LC50=1,520 mg/L/96h
Aquatic chronic : No classification

Persistence and degradability

Readily biodegradable
BOD : 110%

Bioaccumulative potential

Low bioconcentration
log Pow : 0.16

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG) : 2404
Proper Shipping Name (IMDG) : PROPIONITRILE
Packing group (IMDG) : II
Transport hazard class(es) (IMDG) : 3 (6.1)

Air transport(IATA)

UN-No. (IATA) : 2404
Proper Shipping Name (IATA) : Propionitrile
Packing group (IATA) : II
Transport hazard class(es) (IATA) : 3 (6.1)

Marine pollutant : Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Y
MFAG-No : 131

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.



16. Other information

Data sources

: NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.
Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) .
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253.

