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Safety Data Sheet

1. Chemical product and company identification

Product name	:	Cyclopentane

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	:	07565
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	Serious eye damage/eye irritation	Category 2B
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Aspiration hazard	Category 1
Environmental hazards	Aquatic acute	Category 3
	Aquatic chronic	Category 3

Hazard pictograms



Signal word	:	Danger
Hazard statements	:	Highly flammable liquid and vapor May be fatal if swallowed and enters airways Causes eye irritation May cause respiratory irritation May cause drowsiness or dizziness Harmful to aquatic life Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention	:	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. Avoid breathing mist/vapors. Wash hands, forearms and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	:	IF SWALLOWED: Immediately call a POISON CENTER or doctor. 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. Call a POISON CENTER or doctor if you feel unwell. Do not induce vomiting. If eye irritation persists: Get medical advice/attention.
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	:	Pentamethylene

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Cyclopentane	≥ 97	C5H10	Listed	206-016-6	287-92-3

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.
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.

Most Important Symptoms/Effects

Symptoms/effects	:	If inhaled, causes headache, nausea, vomiting, and anesthetic action.

5. Fire fighting measures

Suitable extinguishing media	:	Dry chemical powder, carbon dioxide, dry sand, foam
Unsuitable extinguishing media	:	Water spray
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. Fight fire from windward. Dry chemical powder, carbon dioxide or dry sand should be used for small fires. 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 damage to the environment by flowing of spillage to rivers.

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. Use explosion-proof electric apparatus.
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.

8. Exposure controls / Personal protection equipment

ACGIH TWA	1000 ppm (EX)

Appropriate engineering controls	:	Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection	:	If necessary, wear chemical cartridge respirator with an organic vapor cartage
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	:	Colourless - pale yellow
Odor	:	Benzine like odour
pH	:	No data available
Melting point	:	-93.839 ° C
Freezing point	:	No data available
Boiling point	:	49.252 ° C
Flash point	:	-37 ° C (C.C.)
Auto-ignition temperature	:	385 ° C
Decomposition temperature	:	No data available
Flammability	:	Flammable
Vapor pressure	:	450 hPa (20℃)
Relative density	:	No data available
Density	:	0.741 - 0.746 g/cm³ (20℃)
Relative gas density	:	2.42
Solubility	:	Organic solvents: Soluble in acetone, benzene. Water: 0.0142 % (20℃)
Partition coefficient n-octanol/water (log Pow)	:	2.86
Explosive limits (vol %)	:	1.1 - 8.7 vol %
Viscosity, kinematic	:	0.59 mm²/s (20℃)
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	May react with oxidizing substances.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat.
Incompatible materials	:	Oxidizing substances.
Hazardous decomposition products	:	Carbon monoxide.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50>5000mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)

Skin corrosion/irritation	:	No classification In a skin irritation test (OECD TG 404) with rabbits, no skin reaction (irritation score: 0.0) was observed, and it was determined that it was not irritating. In addition, in a test with guinea pigs, there is a report that slight erythema was observed. From the above results, it was classified as "No classificaton".
Serious eye damage/irritation	:	Causes eye irritation There were 2 reports of eye irritation tests (equivalent to OECD TG 405) with rabbits. In one test, a test with eyes washed after application, conjunctival redness was observed 1 hour after application (6/6 animals), but this resolved 72 hours after application. In the other test (unwashed), although conjunctival redness (6/6 animals), iritis and conjunctival edema (1/6 animals) were observed, these disappeared 4 days after application. From the above results, it was classified into category 2B.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	No classification As for in vivo, it was negative in micronucleus tests with mouse erythrocytes. As for in vitro, it was negative in bacterial reverse mutation tests, and it was positive only with non-metabolic activation systems in a mouse lymphoma test with cultured mammalian cells and a chromosomal aberration test with human lymphocytes.
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	May cause drowsiness or dizziness May cause respiratory irritation This substance was irritating to the respiratory tract. As for experimental animals, upper respiratory tract irritation and anesthetic effects were observed. In addition, effects of central nervous system depression were also observed, and by inhalation or dermal exposure, excitement, loss of equilibrium, stupor, coma and, rarely, respiratory failure occurred. By the oral ingestion, irritation of the gastrointestinal tract, nausea and vomiting were the main symptoms. By inhalation, central nervous system depression, loss of reflexes and lethality were reported at 110 mg/L. In addition, by an oral administration to mice, there is a description that there was a mild-moderate respiration hazard. The effects of central nervous system depression on experimental animals were observed exceeding the range of category 2. From the above, it was classified into category 3 (respiratory tract irritation, narcosis).
STOT-repeated exposure	:	Classification not possible There was no data available for classification in humans. As for experimental animals, in a test in which rats were exposed by inhalation to this substance for 28 days, although slight and reversible effects on the blood system were observed at a higher concentration corresponding to "No classification," but in a 13-week inhalation exposure test, no toxic effects including blood effects were observed even at a further higher concentration. Therefore, although it was considered to be corresponding to "No classification" by the inhalation route, there was no toxicity information by the other routes, and it was classified as "Classification not possible" due to lack of data.
Aspiration hazard	:	May be fatal if swallowed and enters airways Since this substance is a hydrocarbon and has a kinematic viscosity of 0.59 mm2/sec. (20 ℃), it was classified into category 1.

12. Ecological information

Ecotoxicity

Aquatic acute	:	Harmful to aquatic life Daphnia magna EC50=10.5mg/L/48h
Aquatic chronic	:	Harmful to aquatic life with long lasting effects

Persistence and degradability

Not readily biodegradable
BOD : 0%

Bioaccumulative potential

Low bioconcentration
log Pow : 2.86

Mobility in soil

High mobility
Koc : 80

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)	:	1146
Proper Shipping Name (IMDG)	:	CYCLOPENTANE
Packing group (IMDG)	:	II
Transport hazard class(es) (IMDG)	:	3

Air transport(IATA)

UN-No. (IATA)	:	1146
Proper Shipping Name (IATA)	:	Cyclopentane
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	3

Marine pollutant	:	Not applicable

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

Pollutant category	:	Y
MFAG-No	:	128

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

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.