

Safety Data Sheet

1. Chemical product and company identification

Product name : n-Pentane

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 : 32051
 Product numbers applied by the SDS : 32051, 32053
 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 2

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
 Toxic to aquatic life

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.



Kanto Chemical Co., Inc.

	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

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
n-Pentane	≥ 97	C5H12	Listed	203-692-4	109-66-0

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.
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	: Inhalation may causes dizziness, lethargy, headache, nausea, unconsciousness, vomiting.
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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.
- 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.
- 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.
- Material used in packaging/containers : Glass, fluorine resin, stainless steel.
- Do not use vinyl chloride resin, acrylic resin, polyethylene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	1000 ppm
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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	: Organic solvents resistant gloves
Eye protection	: Safety goggles
Skin and body protection	: Protective clothing, protective boots

9. Physical and chemical properties

Physical state	: Liquid
Color	: Colorless.
Odor	: Slight aromatic odor
pH	: Neutral
Melting point	: -129.7 ° C
Freezing point	: No data available
Boiling point	: 36.1 ° C
Flash point	: -49 ° C (C.C.)
Auto-ignition temperature	: 309 ° C
Decomposition temperature	: No data available
Flammability	: Flammable
Vapor pressure	: 573 hPa (20°C)
Relative density	: No data available
Density	: 0.621 - 0.629 g/cm ³ (20°C)
Relative gas density	: 2.5
Solubility	: Water: Insoluble. Organic solvents: Freely soluble in ethanol, diethyl ether, etc.
Partition coefficient n-octanol/water (log Pow)	: 3.39
Explosive limits (vol %)	: 1.4 - 8 vol %
Viscosity, kinematic	: 0.37 mm ² /s (20°C)
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>2000mg/kg
Acute toxicity (dermal)	: No classification rabbit LD50=3000mg/kg



Acute toxicity (inhalation)	: No classification (gas) No classification (vapor) mouse LC50=69765ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	: No classification Based on a primary irritation index of 0.67 in a skin irritation test with rabbits (OECD TG 404, GLP-compliant), it was judged not to be irritating. In addition, it is described that this substance is not irritating as a result of 24-hour semi-occlusive application to humans (GLP-compliant).
Serious eye damage/irritation	: Causes eye irritation an eye irritation test with rabbits (equivalent to the OECD TG 405, GLP-compliant), since transient conjunctivitis was observed, and the irritation score was 3/110, it was judged to be slightly irritating. Based on these, this substance was classified into category 2B.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification This substance was judged not to be sensitizing because no skin reaction induced by sensitization was observed.
Germ cell mutagenicity	: No classification As for in vivo, it was negative in mice dominant lethal tests and a micronucleus test with rat bone marrow cells. As for in vitro, it was negative in bacterial reverse mutation tests and chromosomal aberration tests with cultured mammalian cells.
Carcinogenicity	: Classification not possible
Reproductive toxicity	: Classification not possible
STOT-single exposure	: May cause drowsiness or dizziness May cause respiratory irritation There is a report of dizziness, headache, narcosis and central nervous system depression in humans. In experimental animals, by inhalation exposure of mice, narcotic effects, incoordination and inhibition of righting reflex were observed and were thought to be due to the narcotic effects of this substance. From the above, this substance was classified into category 3 (respiratory tract irritation, narcosis).
STOT-repeated exposure	: Classification not possible In experimental animals, no toxic effect was observed even after administration at up to 20,000 mg/m ³ in a 13-week inhalation test with rats. In a 30-week inhalation test with rats exposed to this substance at 8,970 mg/m ³ , no signs of neurotoxicity were observed when the presence of neurotoxicity was checked by the measure of hindlimb spread on landing and a histological examination of the nerve tissue. From the above, although it was considered to be "Not classified" through the inhalation route based on findings in the experimental animals, this substance was classified as "Classification not possible" due to lack of data because toxicological information on humans was poor, and no information through other routes was available.
Aspiration hazard	: May be fatal if swallowed and enters airways Because this substance is a hydrocarbon with a kinematic viscosity of 0.37 mm ² /s (20°C), this substance was classified into category 1.



12. Ecological information

Ecotoxicity

Aquatic acute : Toxic to aquatic life
Daphnia magna EC50=2.7mg/L/48h

Aquatic chronic : No classification
Pseudokirchneriella subcapitata NOEC(r)=2mg/L/72h

Persistence and degradability

Readily biodegradable
BOD : 96%

Bioaccumulative potential

Low bioconcentration
log Pow : 3.39

Mobility in soil

High mobility
Koc : 72

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) : 1265
Proper Shipping Name (IMDG) : PENTANES
Packing group (IMDG) : II
Transport hazard class(es) : 3

(IMDG)

Air transport(IATA)

UN-No. (IATA) : 1265
Proper Shipping Name (IATA) : Pentanes
Packing group (IATA) : II
Transport hazard class(es) : 3

(IATA)

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

: Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985) .
Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) .
Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984) .
ICSC Card (2009) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .
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.

