

Safety Data Sheet

1. Chemical product and company identification

Product name : n-Nonane

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 : 28309
 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 3
Health hazards	Acute toxicity (inhalation:vapors)	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	Specific target organ toxicity (single exposure)	Category 2 (central nervous system)
	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 1
	Aquatic chronic	Category 1

Hazard pictograms



Signal word : Danger

Hazard statements : Flammable liquid and vapor
 May be fatal if swallowed and enters airways
 Causes skin and eye irritation
 Harmful if inhaled
 May cause respiratory irritation
 May cause drowsiness or dizziness
 May cause damage to organs (central nervous system)
 Very toxic to aquatic life



Very toxic 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. Do not breathe mist/vapors. 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. 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: 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. Call a POISON CENTER or doctor if you feel unwell. Do not induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage.
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-Nonane	≥ 98	C ₉ H ₂₀	Listed	203-913-4	111-84-2

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.

Most Important Symptoms/Effects

Symptoms/effects	: If inhaled, causes ataxia, convulsions, cough, and loss of consciousness.
------------------	---

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.
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 : Glass, fluorine resin, stainless steel.
packaging/containers : Do not use vinyl chloride resin and polyethylene.

8. Exposure controls / Personal protection equipment

ACGIH TWA	200 ppm
-----------	---------

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

Protective equipment

Respiratory protection : If necessary, wear gas mask for organic solvents 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 : Almost odorless
pH : No data available
Melting point : -53.519 ° C
Freezing point : No data available
Boiling point : 150.798 ° C
Flash point : 31 ° C (C.C.)
Auto-ignition temperature : 205 ° C
Decomposition temperature : No data available
Flammability : Flammable
Vapor pressure : 3 hPa (20°C)
Relative density : No data available
Density : 0.716 - 0.721 g/cm³ (20°C)
Relative gas density : 4.4
Solubility : Water: Insoluble. Organic solvents: Soluble in ethanol, chloroform, diethyl ether, ketones.
Partition coefficient n-octanol/water (log Pow) : 5.65
Explosive limits (vol %) : 0.8 - 2.9 vol %
Viscosity, kinematic : 1 mm²/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)	: Classification not possible
Acute toxicity (dermal)	: Classification not possible
Acute toxicity (inhalation)	: No classification (gas) Harmful if inhaled (vapor) rat LC50=3200ppm/4h No classification (dust, mist) rat LC50=46.8mg/L/4h
Skin corrosion/irritation	: Causes skin irritation There is a report that redness was observed, and moderate irritation was observed after 24 hours in a test in which 0.23 mL of this substance was applied to rabbits for 1 hour (Draize test). Based on the above result, this substance was classified into category 2.
Serious eye damage/irritation	: Causes eye irritation Although no report on eye irritation tests on this substance was available, it is generally described that a corneal irritation might occur, therefore, this substance was classified into category 2B.
Respiratory sensitization	: Classification not possible
Skin sensitization	: Classification not possible
Germ cell mutagenicity	: Classification not possible No in vivo data was available and as for in vitro, it was negative in bacterial reverse mutation tests.
Carcinogenicity	: Classification not possible
Reproductive toxicity	: Classification not possible
STOT-single exposure	: May cause damage to organs (central nervous system) May cause drowsiness or dizziness May cause respiratory irritation This substance was irritating to the respiration tract and showed narcotic effects at a high concentration. In rats, salivation, coordination loss, tremors, and clonic and tonic convulsions after 4-hour inhalation exposure at 23 mg/L and irreversible central nervous system depression, ataxia, tremors, and convulsions by 8-hour inhalation exposure at 13.11 mg/L or higher were observed. Effects on the central nervous system were observed at concentrations corresponding to the guidance value range of category 2. Besides, no data in humans were available. From the above, the effects of this substance were those on the central nervous system, respiratory tract irritation and narcotic effects, therefore, it was classified into category 2 (central nervous system) and category 3 (respiratory tract irritation, narcosis).



STOT-repeated exposure	: Classification not possible In experimental animals, it is reported that in a 13-week inhalation test with rats exposed to this substance, no toxicity effects were found at up to the concentration of category 2, and neurological symptoms occurred at a very high concentration (8.4 mg/L/6 hours). Through the oral route, in 90-day tests with rats and mice dosed by gavage, although histopathological lesions in both species were observed in the gastrointestinal tract and the nasal turbinate at the upper limit level of Category 2 (100 mg/kg/day), no statistical differences in body weights were seen at up to the highest dose, 5000 mg/kg/day in both species, therefore, it is considered that these observations were not a serious effect or related to irritation from this substance. From the above, although it is considered that this substance was corresponding to "Not classified" through the oral and inhalation routes, it was classified as "Classification not possible" due to lack of data because no findings through the dermal route in animals and by repeated exposure in humans were available.
Aspiration hazard	: May be fatal if swallowed and enters airways Since this substance is a hydrocarbon and the kinematic viscosity is <7 mm ² /sec (40°C), it was classified into category 1.

12. Ecological information

Ecotoxicity

Aquatic acute	: Very toxic to aquatic life Daphnia magna EC50=0.2mg/L/48h
Aquatic chronic	: Very toxic to aquatic life with long lasting effects

Persistence and degradability

Readily biodegradable
BOD : 96%

Bioaccumulative potential

High bioconcentration
log Pow : 5.65

Mobility in soil

Low mobility
Koc : 80000

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) : 1920
Proper Shipping Name (IMDG) : NONANES
Packing group (IMDG) : III
Transport hazard class(es) : 3
(IMDG)

Air transport(IATA)

UN-No. (IATA) : 1920
Proper Shipping Name (IATA) : Nonanes
Packing group (IATA) : III
Transport hazard class(es) : 3
(IATA)

Marine pollutant : Applicable

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

Pollutant category : X
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) .
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.

