



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: n-Nonane

SDS No. : 5568E-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 3

HEALTH HAZARDS

Acute toxicity (Inhalation): 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 (Respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3 (Narcosis)

Aspiration hazard: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 1

Label elements



Signal word: Danger

HAZARD STATEMENT

Flammable liquid and vapor

Harmful if inhaled

Causes skin irritation

Causes eye irritation

May cause damage to organs (central nervous system)

May cause respiratory irritation

May cause drowsiness or dizziness

May be fatal if swallowed and enters airways

Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

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 non-sparking tools.

Take action to prevent static discharges.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media other than water to extinguish.

Collect spillage.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF EXPOSED OR CONCERNED: Call a POISON CENTER/doctor/physician.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:n-Nonane

Content (%):98(min)

Chemical formula:CH₃(CH₂)₇CH₃

Chemicals No, Japan:2-9

CAS No.:111-84-2

MW:128.26

ECNO:203-913-4

Note : The figures shown above are not the specifications of the product.

4. First-aid measures

Descriptions of first-aid measures

General measures

Call a POISON CENTER/doctor/physician if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.



Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Do NOT induce vomiting.

Immediately call a POISON CENTER/doctor/physician.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

In case of fire, use foam, dry powder, CO₂ to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures**Personnel precautions, protective equipment and emergency procedures**

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.



7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(n-Nonane)

ACGIH(2012) TWA: 200ppm (CNS impair)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.



9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Characteristic odour

Melting point/Freezing point: -51°C

Boiling point or initial boiling point: (n-Nonane) 150.8°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 0.7 vol %

Upper explosion limit: 5.6 vol %

Flash point: (n-Nonane) 31°C

Auto-ignition temperature: (n-Nonane) 205°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble (0.00002g/100ml, 25°C)

n-Octanol/water partition coefficient: log Pow5.65

Vapor pressure: 0.59 kPa (25°C)

Vapor density: 4.4

Density and/or relative density: 0.72

Relative vapor density (Air=1): 4.4

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.02

Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Chemical stability data is not available.

Possibility of hazardous reactions

As a result of flow, agitation, etc., electrostatic charges can be generated.

Reacts with strong oxidants. This generates fire and explosion hazard. (ICSC 1245)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(n-Nonane)

vapor: rat LC50=3200ppm/4hr (ACGIH 7th, 2012)

**Irritant properties****Skin corrosion/irritation**

[GHS Cat. Japan, base data]

(n-Nonane)

rabbit moderate irritation (SIDS, 2013)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(n-Nonane)

corneal irritation (HSDB, 2014)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

STOT**STOT-single exposure**

[cat.2]

[GHS Cat. Japan, base data]

(n-Nonane)

central nervous system (SIDS, 2013)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(n-Nonane)

respiratory tract irritation (JSOH, 1989)

[cat.3 (drow./dizz.)]

[GHS Cat. Japan, base data]

(n-Nonane)

narcotic effect (JSOH, 1989)

STOT-repeated exposure data is not available.

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

(n-Nonane)

cat. 1; hydrocarbon, kinematic viscosity < 7 mm²/s (40°C) (ICSC, 2012)

12. Ecological Information**Ecotoxicity****Aquatic toxicity**

Very toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(n-Nonane)

Crustacea (Daphnia magna) EC50=0.2mg/L/48hr (SIDS, 2010)

Water solubility

(n-Nonane)

very poor (0.00002 g/100 ml, 25°C) (ICSC, 2011)

Persistence and degradability

(n-Nonane)

Degrade rapidly (BOD_Degradation : 96% (METI existing chemical safety inspections, 1996))

Bioaccumulative potential

(n-Nonane)

log Pow=5.65 (ICSC, 2011)

Mobility in soil

Mobility in soil data is not available.

**Other adverse effects**

Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No. or ID No.: 1920

UN Proper Shipping Name :

NONANES

Class or division (Transport hazard class) : 3

Packing group : III

ERG GUIDE No.: 128

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1920

Proper Shipping Name :

NONANES

Class or division : 3

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 1920

Proper Shipping Name :

NONANES

Class or division : 3

Hazard labels : Flamm.liquid

Packing group : III

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Hazardous to the aquatic environment – acute hazard: cat.1

n-Nonane

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

n-Nonane

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. X

n-Nonane

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemicals listed in TSCA Inventory

n-Nonane

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.



16. Other information

GHS classification and labelling

Flam. Liq. 3: H226 Flammable liquid and vapor
Acute Tox. 4: H332 Harmful if inhaled
Skin Irrit. 2: H315 Causes skin irritation
Eye Irrit. 2B: H320 Causes eye irritation
STOT SE 2: H371 May cause damage to organs
STOT SE 3: H335 May cause respiratory irritation
STOT SE 3: H336 May cause drowsiness or dizziness
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways
Aquatic Acute 1: H400 Very toxic to aquatic life
Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)
IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2021 TLVs and BEIs. (ACGIH)
Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2020).