



Safety Data Sheet

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

Product identifier:

Product name: Formamide

SDS No. : 3264E-3

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

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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FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

Section 2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Corrosive to metals: Category 1

HEALTH HAZARDS

Carcinogenicity: Category 2

Reproductive toxicity: Category 1B

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

Specific target organ toxicity – repeated exposure: Category 2 (male genitalia)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

May be corrosive to metals

Suspected of causing cancer

May damage fertility or the unborn child

May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure (male genitalia)

PRECAUTIONARY STATEMENT**Prevention**

Keep only in original packaging.

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

Use only outdoors or in a well-ventilated area.

Response

Absorb spillage to prevent material-damage.

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

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

Storage



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

Disposal

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

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Formamide

Content (%):98(min)

Chemical formula:HCONH₂

Chemicals No, Japan:2-681

CAS No.:75-12-7

MW:45.04

ECNO:200-842-0

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

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention 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.

If skin irritation or rash 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.

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

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

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

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – other (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.

Section 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

Absorb spillage to prevent material-damage.

Collect spillage.

Section 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.

(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 or face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Storage**Conditions for safe storage**

Keep container tightly closed.

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

(Incompatible storage condition)

The product may corrode metal. Do not keep in a metal container.

Container and packaging materials for safe handling

Keep only in original packaging.

Store in a corrosion resistant/specified container with a resistant inner liner.

Glass

Polyethylene



Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(Formamide)

ACGIH(2020) TWA: 1ppm (Hematological eff; liver cancer; developmental toxicity)

Notation

(Formamide)

Skin

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.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless, clear

Odor: Slightly characteristic odor

Melting point/Freezing point: 2.5°C

Boiling point or initial boiling point: (Formamide)(decomposes) 210°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: 2.7 vol %

Upper explosion limit: 19 vol %

Flash point: (Formamide)(C.C.) 120°C

Auto-ignition temperature: (Formamide)> 500°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

n-Octanol/water partition coefficient: log Pow-1.51

Vapor pressure: 8 Pa (20°C)

Density and/or relative density: 1.13

Relative vapor density (Air=1): 1.6

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

Particle characteristics data is not available.



Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

The vapour is heavier than air.

Decomposes at 180°C. This produces toxic and corrosive gases including ammonia and hydrogen cyanide. Reacts with oxidants, acids and bases. This generates fire and toxic hazard.

Attacks aluminium, brass, copper, iron, lead and some forms of plastic. (ICSC 0891)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Bases, Oxidizing agents

Hazardous decomposition products

Ammonia, Hydrogen cyanide

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formamide)

rat LD50=3200mg/kg (SIAR, 2007)

Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formamide)

rabbit LD50 >6000mg/kg (ACGIH 8th, 2020)

Acute toxicity (Inhalation)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formamide)

mist: rat LC50 >3900ppm/8hr (cal.: >5515ppm/4hr, 14.4mg/L/4hr) (ACGIH 8th, 2020)

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation data is not available.

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[ACGIH]

(Formamide)

A3(2020) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

Reproductive toxicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(Formamide)

cat. 1B; NTP DB, 2014; SIDS, 2013

Specific target organ toxicity (STOT)

STOT-single exposure



[Data for components of the product]

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(Formamide)

narcotic effect (AICIS IMAP, 2013)

STOT-repeated exposure

[Data for components of the product]

[cat.2]

[GHS Cat. Japan, base data]

(Formamide)

male genitalia (ACGIH 8th, 2020; AICIS IMAP, 2013)

Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[GHS Cat. Japan, base data]

(Formamide)

Fish (Atheriniformes) LC50 >100mg/L/96hr (MOE Japan, 1998)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]

(Formamide)

Algae (*Pseudokirchneriella subcapitata*) NOEC >10mg/L/72hr (MOE Japan, 1998)

Water solubility

(Formamide)

100 g/100 ml (PHYSPROP_DB, 2009)

Persistence and degradability

[Data for components of the product]

(Formamide)

Rapidly degradable (OECD TG301A_DOC_Degradation : 99% (SIDS, 2013))

Bioaccumulative potential

[Data for components of the product]

(Formamide)

log Pow=-1.51 (ICSC, 2013)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 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

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



Section 14. Transport Information

UN Number or ID Number : 1760

UN Proper Shipping Name :

CORROSIVE LIQUID, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : III

ERG GUIDE No.: 154

Special provisions No.: 223; 274

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1760

UN Proper Shipping Name :

CORROSIVE LIQUID, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : III

Special provisions No.: 223; 274

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1760

UN Proper Shipping Name :

CORROSIVE LIQUID, N.O.S.

Class or division (Transport hazard class) : 8

Hazard labels : Corrosive

Packing group : III

Special provisions No.: A3; A803

Environmental hazards

Marine pollutants (yes/no) : no

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

Noxious Liquid Substances ; Cat. Y

Formamide

Section 15. Regulatory Information

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Formamide

Other regulatory information

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

Section 16. Other information

GHS classification and labelling

Corrosive to metals, Category 1: H290 May be corrosive to metals

Carcinogenicity, Category 2: H351 Suspected of causing cancer

Reproductive toxicity, Category 1B H360 May damage fertility or the unborn child

STOT – single exposure, Category 3, Narcotic effects: H336 May cause drowsiness or dizziness.

STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2020 Edition (Incorporating Amendment 40-20)



IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 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 2021).