

## Safety Data Sheet

### 1. Product and company identification

Product name : FORMAMIDE DRY F

Part No. : D312137-1

#### Company information

Name of supplier : HIRANUMA Co., Ltd.

Address : 1739 Motoyoshida, Mito, Ibaraki, 310-0836, JAPAN

Name of section : Quality assurance department

Telephone number : +81-29-247-7343

Facsimile number : +81-29-240-0381

Mail address : info-f2@hiranuma.com

Name of Manufacturer : KANTO CHEMICAL CO., INC.

Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo,  
103-0022, JAPAN

Recommended use : For research use only

Restrictions on use : Seek expert judgment when using the product for  
applications other than those recommended.

### 2. Summary of danger and Hazard

#### GHS classification

Physical hazard

Corrosive to metals

: Category 1

Health hazard

Carcinogenicity : Category 2

Reproductive toxicity

: Category 1B

Specific target organ toxicity (single exposure)

: Category 3 (narcosis)

Specific target organ toxicity (repeated exposure)

: Category 2 (reproductive organs (male))

Hazard pictograms



Signal word

: Danger

Hazard statement : May be corrosive to metals  
May cause drowsiness or dizziness  
Suspected of causing cancer  
May damage fertility or the unborn child  
May cause damage to organs (reproductive organs (male))  
through prolonged or repeated exposure

#### Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.  
Keep only in original container.  
Do not breathe mist/vapors.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF exposed or concerned: Get medical advice/attention.  
Call a POISON CENTER or doctor if you feel unwell.  
Get medical advice/attention if you feel unwell.  
Absorb spillage to prevent material-damage.

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

Substance/Mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Formamide	100	CH <sub>3</sub> NO	Listed	200-842-0	75-12-7

### 4. First aid measures

#### First aid measures

After inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

After skin contact : Wash the affected areas under running water.

After eye contact : Wash the affected areas under running water for at least 15

minutes. If necessary, get medical treatment.

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 causes lethargy, headache, nausea, unconsciousness.

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## **5. Fire fighting measures**

Suitable extinguishing media

: Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam

Unsuitable extinguishing media

: Ordinary foam extinguisher

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. Alcohol-resistant foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response)

: Wear breathing apparatus.

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## **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 discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated

wastewater into the environment must be avoided.

#### 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.

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### 7. Cautions of handling and storage

#### Handling

Technical measures

: Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Pay attention to fire.  
Ventilate well at working places.

Cautions for safety handling

: Avoid formation of vapor and aerosols.  
Do not allow contact with oxidizing substances.

#### Storage

Adequate storage condition

: Store the bottle tightly closed in a cool, dark place because the substance is hygroscopic.

Safety adequate container materials

: Glass, fluorine resin.  
Do not use polyvinyl chloride resin, polystyrene.

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### 8. Exposure control/Personal protection

ACGIH TWA	10 ppm
Remark (ACGIH)	Skin

Appropriate engineering controls

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

#### Protective equipment

Respiration protection

: Chemical cartridge respirator with an organic vapor cartridge or airline respirator

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection

: Protective clothing, protective boots

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## 9. Physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: Ammonia like
pH	: Weak alkalinity
Melting	: 2.55 °C
Freezing point	: No data available
Boiling point	: 210.5 °C (Partially decomposed)
Flash point	: 175 °C (C.C.)
Auto-ignition temperature	: > 500 °C
Decomposition temperature	: No data available
Flammability	: Flammable
Vapor pressure	: 0.004 hPa(20 °C)
Relative density	: No data available
Density	: 1.133 - 1.138 g/cm <sup>3</sup> (20 °C)
Relative gas density	: 1.6
Solubility	: Water ; Miscible. Organic solvents ; Miscible with ethanol, acetone.
Partition coefficient n-octanol/water (log Pow)	: -1.51
Explosive limits (vol %)	: 2.7 - 19 vol%
Viscosity, kinematic	: 3.31 mm <sup>2</sup> /s (20 °C)
Particle characteristics	: No data available

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## 10. Stability and reactivity

Reactivity	: When hydrolyzed, it becomes ammonium formate, but when it is dehydrated by heating, it becomes formamide again. Corrodes copper, brass and mild steel.
Chemical stability	: Stable under normal conditions. Hygroscopic.
Possibility of hazardous reactions	: N, N-dichloroformamide produced by reacting with hypochlorous acid is explosive.

Hydrogen cyanide is produced by a powerful dehydrating agent such as phosphorus pentoxide.

Conditions to avoid : Light, heat, moisture.

Incompatible materials : Oxidizing substances.

Hazardous decomposition products

: Carbon monoxide, nitrogen oxide, hydrogen cyanide.

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## 11. Toxicological information

Acute toxicity (oral) : No classification

rat LD50=3200 mg/kg

Acute toxicity (dermal)

: No classification

rabbit LD50>6000 mg/kg

Acute toxicity (inhalation)

: No classification (gas)

No classification (vapor)

No classification (dust, mist)

rat LC50>21 mg/L/4h

Skin corrosiveness/irritation

: No classification

The substance has been reported to be slightly irritating to skin and eyes.

Serious eye damage/eye irritation

: No classification

In a rabbit eye irritation test (corresponding to OECD TG405), the overall average scores for 24/48/72 hours were 1.91 for conjunctival redness, 0.44 for edema, and 0.17 for corneal opacification. Based on the above, it has been reported that this substance is slightly irritating to the eyes of rabbits.

Respiratory sensitization

: Classification not possible

Skin sensitization

: Classification not possible

Mutagenicity

: Classification not possible

As for in vivo, it was negative in a dominant lethal test with mice, negative in a micronucleus test with mouse peripheral blood erythrocytes, and positive in a mouse bone marrow micronucleus test by intraperitoneal administration. As for in vitro, it was negative in bacterial reverse mutation tests. Micronucleus test

- findings are conflicting, with multiple oral doses being negative and single intraperitoneal doses being positive. The micronucleus inducibility was unclear due to the limitations of each test, and it was classified as "classification not possible" due to lack of data.
- Carcinogenicity : Suspected of causing cancer (category 2)  
ACGIH classifies it as the group A3 (confirmed animal carcinogen with unknown relevance to humans).
- Reproductive toxicity : May damage fertility or the unborn child (category 1B)  
There is a report that in a continuous breeding study with mice by the oral route, fertility effects were observed at a dose where parental toxicity. There is a report that in a teratogenicity test with mice by the oral route, skeletal malformations were observed in fetuses at a dose where no maternal toxicity was observed. From the above, it was classified into category 1B.
- Specific target organ toxicity (single exposure)  
: May cause drowsiness or dizziness (category 3)  
In a single inhalation exposure test using rats, symptoms of "lethargy, hunchback posture, clear or red eye discharge, red nasal discharge, partially closed eyes, diarrhea, and brown staining of the lower abdomen" were observed at doses of 14–21 mg/L. It is reported that the symptoms almost disappeared on the 8th day after exposure. Based on the above, it was classified into category 3 (narcosis).
- Specific target organ toxicity (repeated exposure)  
: May cause damage to organs (reproductive organs (male)) through prolonged or repeated exposure (category 2)  
In a 2-year combined chronic toxicity/carcinogenicity study by oral gavage in rats and mice, hyperplasia of bone marrow in rats, calcification of testicular arteries and sheath of testis and spleen in mice at 80 mg/kg/day. It has been reported that hematopoietic cell proliferation was observed. There is also a report that blood effects were observed at 300 mg/kg/day in two 90-day repeated dermal administration studies using rats. Furthermore, in a 2-week repeated inhalation exposure test using rats, it was reported that platelet count decreased at 500ppm or more, and kidney effects and testicular degeneration were observed at 1500ppm. Based on the above, the substance was classified into category 2 (reproductive organs (male)) because effects on testis

were observed within the dose range of category 2.

Aspiration hazard : Classification not possible

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## 12. Ecological information

### Ecotoxicity

Aquatic acute : No classification  
Pseudokirchneriella subcapitata ErC50>1000 mg/L/72h

Aquatic chronic : No classification  
Pseudokirchneriella subcapitata NOEC>10 mg/L/72h

### Persistence and degradability

Readily biodegradable

BOD : 99%

### Bioaccumulative potential

Low bioconcentration

log Pow : -1.51

### Mobility in soil

High mobility

Koc : 3.6

### Hazardous to the ozone layer

Classification not possible

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## 13. Disposal consideration

Ecology – waste materials

: 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.

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## 14. Transport information

### International Regulations

#### Transport by sea (IMDG)

UN-No. (IMDG) : 1760

Proper Shipping Name (IMDG)  
: CORROSIVE LIQUID, N.O.S.

Packing group (IMDG)  
: III



Transport hazard class(es) (IMDG)

: 8

**Air transport (IATA)**

UN-No. (IATA) : 1760

Proper Shipping Name (IATA)

: Corrosive liquid, n.o.s.

Packing group (IATA)

: III

Transport hazard class(es) (IATA)

: 8

Marine pollutant : Not applicable

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

Pollutant category : Y

MFAG-No : 154

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**15. Regulatory information**

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

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**16. Other information**

References

- 1) Company data on file (SDS provided by manufacturer)
- 2) 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 concentrations or ranges of concentrations shown in "3. Composition/Information on ingredients" are examples calculated based on the amounts used at the time of manufacture and do not guarantee the concentrations in the product. The total value may not be 100% due to fractional processing. The Safety Data Sheet(SDS) is prepared based on JIS Z7253.