

## Safety Data Sheet

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING**

|              |   |
|--------------|---|
| Product name | FeRhoNox-1  |
| Product code | GC901   |
| Company name | GORYO Chemical, Inc.  |
| Address      | EAREE Bldg. 5F, Kita 8 Nishi 18-35-100 Chuo-ku, Sapporo 060-0008, Japan |
| Department   | Product Development Div.  |
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| E-mail       | <a href="mailto:info@goryochemical.com">info@goryochemical.com</a>      |

**2. HAZARDS IDENTIFICATION**

GHS classification

Classification of the substance or mixture

|                       |                             |
|-----------------------|-----------------------------|
| PHYSICAL HAZARDS      | Classification not possible |
| HEALTH HAZARDS        | Classification not possible |
| ENVIRONMENTAL HAZARDS | Classification not possible |

Label elements

|                              |                |
|------------------------------|----------------|
| Pictograms or hazard symbols | None           |
| Signal word                  | No signal word |
| Hazard statements            | None           |
| Precautionary statements     | None           |

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

|                      |            |
|----------------------|------------|
| Substance or Mixture | Substance  |
| Compound name        | FeRhoNox-1 |
| Percent              | ≥ 70% (LC) |

**4. FIRST AID MEASURES**

Skin contact

- Wash off immediately with plenty of water. If symptoms persist, call a physician.
- If skin stimulates or rash appears, call a physician.

Eye contact

- Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, consult a physician.
- Take off your contact lens when wash with water.

Inhalation

- Remove to fresh air immediately, give a rest and keep warm covering the body with blanket, and obtain medical attention.
- If feeling bad, call a physician.

Ingestion

- Rinse out mouth thoroughly with water.
- If feeling bad, call a physician.

Protection of first-aiders

- A rescuer should wear personal protective equipment, such as rubber gloves and airtight goggles.

**5. FIRE-FIGHTING MEASURES**

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | Water spray, Alcohol resistance, Powder, Carbon dioxide  |
| Specifically dangerous hazards | Thermal decomposition can lead to release of irritating and toxic gases and vapors.  |
| Extinguishing method           | Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire |

Protection of fire-fighters

in the surroundings: Remove movable containers if safe to do so.

Use personal protective equipment as required

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

- Go to the windward, and wearing protective clothing during procedures is imperative.
- Keep away the people under lee and seal off by roping spill site.
- Keep away near inflammables swiftly and prepare fire-fighting equipment.

Environmental precautions

- Prevent product from entering drains.

Methods and materials for containment and cleaning up

- Do not touch spilled material without suitable protection. After material is completely picked up, wash the spill site with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose of contaminated clothing.

## 7. HANDLING AND STORAGE

Handling

Technical measures

- Handling is performed in a well-ventilated place.
- Avoid contact with skin, eyes and clothing.
- Wear suitable protective equipment.
- Wash hands and face thoroughly after handling.
- Use a local exhaust if dust or aerosol will be generated.

Advice on safe handling

- Handle in accordance with good industrial hygiene and safety practice.
- Vessel shouldn't be treated violently, such as rolling, shocking or dragging.

Storage

Storage conditions

- Keep container tightly closed. Store in a dark place under -20 degrees Celsius.
- Avoid long storage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls

Install a closed system or local exhaust.

Install safety shower and eye bath.

Control parameters

Not set up

Personal protective equipment

Respiratory protection

Dust respirator

Hand protection

Protective gloves

Eye protection

Safety glasses

Skin and body protection

Protective clothing. Protective boots, if the situation requires.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (color/form)

Reddish purple/solid

Odor

Odorless

pH

No data available

Melting point/freezing point

No data available

Boiling Point/Range

No data available

Flash Point

No data available

Explosive limits

No data available

Vapor pressure

No data available

Vapor density

No data available

Density

No data available

Solubility(ies)

[Water]

No data available

[Other solvents]

Soluble

Dimethyl sulfoxide, Ethyl acetate

Firing point No data available

Decomposition temperature No data available

#### 10. STABILITY AND REACTIVITY

|                                  |  |
|----------------------------------|--|
| Stability                        | Stable under proper conditions.          |
| Reactivity                       | None under normal processing.            |
| Incompatible materials           | Strong oxidizing agents, reducing agents |
| Hazardous Decomposition Products | None under normal use.                   |

#### 11. TOXICOLOGICAL INFORMATION

|                                |                   |
|--------------------------------|-------------------|
| Acute Toxicity                 | No data available |
| Skin corrosion/irritation      | No data available |
| Serious eye damage/irritation  | No data available |
| Respiratory sensitization      | No data available |
| Skin sensitization             | No data available |
| Reproductive cell mutagenicity | No data available |
| Carcinogenicity                | No data available |
| Reproductive toxicity          | No data available |
| STOT-single exposure           | No data available |
| STOT-repeated exposure         | No data available |
| Aspiration hazard              | No data available |

#### 12. ECOLOGICAL INFORMATION

|                           |                          |
|---------------------------|--------------------------|
| Ecotoxicity effects       | No information available |
| Mobility                  | No information available |
| Biodegradation            | No information available |
| Bioaccumulation           | No information available |
| Hazard to the ozone layer | No information available |

#### 13. DISPOSAL CONSIDERATIONS

Chemical materials

- Dispose of in accordance with local regulations.

Polluted vessels and package

- Dispose of in accordance with local regulations.

#### 14. TRANSPORT INFORMATION

|                         |                          |
|-------------------------|--------------------------|
| ADR/RID                 | Not regulated            |
| UN number               | -                        |
| Proper shipping name    | -                        |
| UN classification       | -                        |
| Subsidiary hazard class | -                        |
| Packing group           | -                        |
| Marine pollutant        | No information available |

|  |                          |
|--|--------------------------|
| IMDG   | Not regulated            |
| UN number  | -                        |
| Proper shipping name   | -                        |
| UN classification  | -                        |
| Subsidiary hazard class  | -                        |
| Packing group  | -                        |
| Marine pollutant (Sea)   | No information available |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

|           |               |
|-----------|---------------|
| IATA      | Not regulated |
| UN number | -             |

Proper shipping name

UN classification

Subsidiary hazard class

Packing group

Environmentally Hazardous

No information available

Substance

## 15. REGULATORY INFORMATION

Not applicable

## 16. OTHER INFORMATION

- International Chemical Safety Card (ICSC) database in Japanese (National Institute of Health Sciences)
  - This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity.
  - Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used.
  - Some new information or amendments may be added afterwards.
  - If the products are to be used far behind the expected time of use or if you have any questions, please feel free to contact us.
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