

February 04, 2015

Material Safety Data Sheet**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING**

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|--------------|---|
| Product name | Reaction Buffer |
| Product code | IM118C |
| Company name | Goryo Chemical, Inc. |
| Address | Business spring 2F, Kita 21 jou Nishi 12 tyoume2, Kita-ku, Sapporo, Hokkaido, Japan |
| Department | Product development div. |
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| Fax | 011-351-1822 |
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2. HAZARDS IDENTIFICATION

| | |
|------------------------------------|--|
| GHS classification | Cannot be classified |
| Hazardous/Non-hazardous Components | |
| Nocuous | extremely low |
| Effect on environment | extremely low |
| Physically and chemical hazards | The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|---------------------|-----------------|
| Single or mixture | Mixture |
| Compound name | Reaction Buffer |
| Component | - |
| Chemical formula | - |
| CAS Registry Number | - |

4. FIRST AID MEASURES

| | |
|----------------------------|---|
| Skin contact | <ul style="list-style-type: none">• Wash off immediately with plenty of water. If symptoms persist, call a physician.• If skin stimulates or rash appears, call a physician. |
| Eye contact | <ul style="list-style-type: none">• 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 | <ul style="list-style-type: none">• Move to fresh air. If symptoms persist, consult a physician.• If feeling bad, call a physician. |
| Ingestion | <ul style="list-style-type: none">• Rinse mouth and throat.• Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. |
| Notes to physician | <ul style="list-style-type: none">• Treat symptomatically. |
| Protection of first-aiders | <ul style="list-style-type: none">• 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 | May emit hazardous nitrogen oxides and halogen compounds. |
| 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 in the |

surroundings: Remove movable containers if safe to do so.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

- Use personal protective equipment. Keep people away from and upwind of spill/leak.
- Remove ignition source around product.

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. Also 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) | colorless /liquid |
| Odor | none |
| 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 |
| Lower | No data available |
| Upper | No data available |
| Density | No data available |
| Solubility | Soluble to water |
| Molecular weight | No data available |

10. STABILITY AND REACTIVITY

| | |
|------------|--|
| Stability | Stable under proper conditions. |
| Reactivity | No special reactivity has been reported. |

Incompatible materials Strong oxidative reagents, reducing agents

Hazardous Decomposition Products

Nitrogen oxide, Halogenated organics, Carbon monooxide, Carbon dioxide

11. TOXICOLOGICAL INFORMATION

| | |
|-------------------------------|-------------------|
| Acute Toxicity | No data available |
| Skin corrosion/irritation | No data available |
| Serious eye damage/irritation | No data available |
| Inhalation | No data available |
| Germ cell mutagenicity | No data available |
| Carcinogenicity | No data available |
| reproduction toxicity | No data available |
| Target Organ Effects | No data available |

12. ECOLOGICAL INFORMATION

| | |
|---------------------|---------------------------|
| Ecotoxicity effects | No information available. |
| Mobility | No information available. |
| Biodegradation | No information available |
| Bioaccumulation | Does not bioaccumulate. |

13. DISPOSAL CONSIDERATIONS

Chemical materials

- You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system.
- Dispose of in accordance with local regulations

Polluted vessels and package

- Wash thoroughly before disposal.

14. TRANSPORT INFORMATION

Hazards Class Does not correspond to the classification standard of the United Nations
IATA

| | |
|----------------------|---|
| Proper shipping name | Not classified as dangerous in the meaning of transport regulations |
| Hazard Class | No information available |
| Subsidiary Class | No information available |
| Packing group | No information available |
| UN-No | No information available |

15. JAPANESE 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.
