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SAFETY DATA SHEET

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

1.1. Identification of the substance:

Product name: L-Cysteine Hydrochloride Monohydrate

General name: L-Cysteine Hydrochloride Monohydrate

1.2. Use of the substance: Various use (drugs, nutritional, industrial)

1.3. Details of the supplier of the safety data sheet:

Name of manufacture/supplier: Nippon Protein Co., Ltd.

Address: 575-1, Shimada-Cho, Ashikaga-Shi, Tochigi-Ken 326-0337, Japan

Telephone number: +81-0284-73-0111

Fax number: +81-0284-73-0753

1.4. Emergency telephone number: 81-0284-73-0111

Section 2: Hazards identification

2.1. Classification of the substance

Physical Hazards: Classification not possible

Health Hazards

Skin corrosion/irritation: Classification not possible

Eye irritation: Classification not possible

Acute toxicity: Classification not possible

Environmental Hazards: Classification not possible

2.2. Label Elements

Pictogram: Not applicable

2.3. Other hazards: May cause skin and eye irritation.

Section 3: Composition/ information on ingredients

3.1. Substance

General name/Chemical Name: L-Cysteine Hydrochloride Monohydrate

Synonyms: (2R)-2-Amino-3-sulfanylpropanoic acid
monohydrochloride monohydrate

Concentration/concentration region(%): 98.5-101.0

CAS No.: 7048-04-6

Reference Number in Gazetted List in Japan: 9-1590, 1-215

Section 4: First aid measures

4.1. Description of first aid measures

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms continue, call a POISON CENTER or doctor/physician.

IF ON SKIN: In case of skin irritation or discomfort, stop using the product. Rinse skin with water/shower. If symptoms continue, call a POISON CENTER or doctor/physician.

IF IN EYES: Rinse cautiously with water for 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms continue, call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Acute effects: May cause skin and eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

No information available

Section 5: Firefighting measures

5.1. Extinguishing media:

Powder, fire foam, water mist or carbon dioxide.

5.2. Special hazard arising from the substance or mixture

Avoid contact with water or oxidants.

5.3. Advice for firefighters

Take action from windward.

Non-responsible personnel should escape from the fire site.

Move container to a safe area.

Fire fighters should wear appropriate personal protective equipment.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Off-limit for non-responsible personnel.

Wear appropriate personal protective equipment described in section "8. EXPOSURE

CONTROLS/PERSONAL PROTECTION" so as to prevent inhalation and exposure of eyes or skin.

6.2. Environmental precautions

Avoid release directly into the environment because product may cause local effects

6.3. Methods and material for containment and cleaning up

Stop leakage if it is not dangerous.

6.4. Reference to other sections

Personal protection :see section 8

Section 7: Handling and storage

7.1. Precautions for safe handling

Take necessary measures described in "8. EXPOSURE CONTROLS AND PERSONAL PROTECTION".

Wash hands thoroughly after handling.

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

Wash contaminated work clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technological countermeasure:

Install light and ventilation in storage rooms which are necessary to storage or handle dangerous products.

Incompatible substances or mixture:

Strong oxidisers

Conditions for safe storage

Avoid humidity, sunlight and high temperature.

Storage in a cool and well ventilated place.

Container packaging materials:

Use a sealed container without damage or leakage.

Section 8: Exposure controls/ personal protection

8.1. Control parameters

Occupational Exposure Limits: Not specified

8.2. Exposure controls

Respiratory protection: Wear hazard mask and/or respiratory protection if necessary
Hand protection: Wear protective gloves as appropriate.
Eye protection: Wear protective glasses or goggle as required.
Skin protection: Use safety protective clothing and apron as required.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance: White crystalline powder
Odour: Characteristic odour
Melting point: 175 - 178°C
Relative density: 0.8 - 0.9
Solubility in water: 110 g/100 g H₂O (20°C)
pH: 1.5 - 2.0 (1.0 g/100 mL H₂O)
Relative optical rotation: $[\alpha]_{20D} = -6.0 \sim -7.5$ °
[Converted dry material C 8, HCl solution (6 mol/l.)]

Section 10: Stability and reactivity

10.1. Reactivity

See section 10.4.

10.2. Chemical stability

This substance is considered to be a non-reactive material under normal conditions.

10.3. Possibility of hazardous reactions

This substance is hygroscopic, shows the acidic moisture conditions, and corrosive.

10.4. Conditions to avoid

Avoid moisture absorption.
Using a ventilator when dust generate.
Avoiding contact with strong oxidisers for reducing substance.
Avoid direct sunlight, store in cool dark place.

10.5. Incompatibility materials

Water, strong oxidisers

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, nitrogen oxide, chlorine, hydrogen chloride

Section 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral): Rat LD₅₀ = 1,890 mg/kg (for L-Cysteine)
Skin irritation: May cause skin irritation. No specific data available.
Eye irritation: May cause eye irritation. No specific data available.

Section 12: Ecological information

12.1. Toxicity

No data available

12.2 Persistence and degradability

BOD – 0.93 g/g (for L-Cysteine)

12.3 Bio accumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

No information available

Section 13: Disposal consideration

13.1. Waste treatment methods

Dispose of waste or containers in accordance with applicable local, regional and international regulations and standards.

Dispose of consulting to a certificated waste trader or local offices if they deal with the waste.

Containers are to be reused or recycled after cleaning if possible, or disposed of in accordance with related laws and regulations.

Containers should completely be cleaned up before disposal.

Section 14: Transport information

14.1-14.5 Not classified as dangerous in meaning of transport regulations

14.6. Special precautions for users

When transporting, confirm no damage to containers. Avoid handling violently or getting wet. Load to prevent fall or falling down containers and take preventive measures of collapse.

Emergency Response Guidebook (Yellow Card) Number :154

14.7 Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC code.

Section 15: Regulatory information

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

Food Sanitation Act: Designated food additive (L-Cysteine Hydrochloride Monohydrate)

Pharmaceutical Affairs Act: European Pharmacopocia, U.S. Pharmacopocia

Civil Aeronautics: Not applicable

Ship Safety Act: Not applicable

Act on Port Regulations: Not applicable

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

Section 16: Other information

[Disclaimer] This MSDS has been prepared in accordance with the following regulations;

REGULATION (EC) No 1907/2006, DIRECTIVE 67/518/EEC, DIRECTIVE 1999/45/EC, REGULATION (EC) No 1272/2008

The information herein is based on our best knowledge but no warranty made on any specific values.