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MEITO SANGYO CO., LTD.

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MATERIAL SAFETY DATA SHEET

MSDS for Dextran Sulfate Sodium (DST-H)

MSDS No. DS-TH-003

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1. Identification of the substance / preparation and of the company / undertaking

1.1. Identification of the substance or preparation

Product Name : Dextran Sulfate Sodium (DST-H)

1.2. Company / undertaking identification

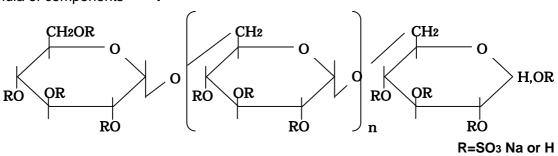
| Company Name | : | MEITO SANGYO CO., LTD. |
|--------------|---|-------------------------------------|
| Address | : | 2-41 Sasazuka-cho, Nishi-ku, Nagoya |
| | | 451-8520, Japan |
| Phone No. | : | +81-52-521-7111 |
| FAX No. | : | +81-52-524-3738 |

1.3. Emergency / information

| Department Name | : Fine Chemicals Dept. |
|-----------------|------------------------|
| Phone No. | : +81-42-330-1721 |
| FAX No. | : +81-42-330-1725 |

2. Composition / information on ingredients

Chemical Name: Dextran sulfate sodiumGeneral Name: Dextran sulfate sodiumSynonyms: Dextran sulfuric acid ester sodium saltChemical Family: Derivative of dextranCAS Number: 9011-18-1Formula of components:



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| 3. Hazards identification Health Hazard Information Signs and Symptoms of Exposure | No remarkable health hazards are informed No remarkable signs and symptoms are observed. If a wound contacts with this material, prolongation of bleeding time is possible. |
|--|--|
| 4. First aid measures Inhalation | : Stop handling powder immediately leave the work area to fresh air. Rinse mouth, throat and nasal cavity thoroughly with water and take a rest. |
| Skin Contact Eye Contact | Wash with soap and water.Flush eyes thoroughly with water. |
| 5. Fire-fighting measures | : No special requirements. |
| Extinguishing media Products of combustion | Water spray, dry chemical, foam, carbon dioxideCarbon monoxide, carbon dioxide, smoke and so on. |
| 6. Accidental release mea | sures |
| If material released or spilled | : Wash down or remove by use of suitable equipment, such as vacuum cleaner. |
| 7. Handling and storage p | recautions |
| Handling | : Avoid suspending the powder in air. Do not store or handle in the presence of sparks or open flame. |
| Storage | : To protect quality, store in well-closed containers in a dry place away from heat and sunlight. |
| 8. Exposure control / pers | onal protection |
| Respiratory protection | : Use of dust proof respirator is recommended so as not to inhale powder. |
| Eye protection | : Use of safety glasses or goggles is recommended to protect the eyes. |
| Hand / Skin protection | : Use of chemical gloves or adhesive bandage is recommended to prevent the powder from contacting with a wound of hand or skin. |

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9. Physical and chemical properties

| | · A white to light vallow powdor |
|-----------------------|--|
| Appearance | : A white to light yellow powder |
| Odor | : Odorless |
| рН | : 5.0 – 7.5 |
| Solubility in water | : Not less than 1.0 g dissolves in 1 mL of water |
| Bulk Density | : About 0.6 g/mL |
| Explosive properties | : May form explosive dust-air mixture. |
| Boiling point | : N/A |
| Melting point | : N/A |
| Flash point | : Not determined |
| Flammability | : Not determined |
| Autoflammability | : Not determined |
| Vapor Density (Air=1) | : N/A |
| Vapor Pressure (Pa) | : N/A |
| Oxidizing properties | : None |
| Evaporation Rate | : N/A |
| (Butyl Acetate = 1) | |
| | |

10. Stability and reactivity

| Stability | : | Stable |
|--------------------------|---|--------------------------|
| Hazardous Decomposition | : | No information available |
| or Byproducts | | |
| Hazardous Polymerization | : | None |
| Products | | |

11. Toxicological information

| LD ₅₀ (oral administration) | : | Not less than 10 g/kg-rat |
|--|---|--|
| Signs and Symptoms of | : | No remarkable signs and symptoms are observed. |
| Exposure | | If a wound contacts with this material, Prolongation of bleeding |
| | | time is possible. |
| Ingestion | : | Product is not considered toxic but may be harmful if taken in |
| | | large quantities. |
| Medical conditions | : | No information available |
| aggravated by exposure | | |

| 12. | Ecological | information |
|-----|------------|-------------|
| Ν/ | lobility | |

| Mobility | : | No data |
|-------------------------------|---|---------------|
| Persistence and | : | Biodegradable |
| degradability | | |
| Bioaccumulative potential | : | None known |
| Persistence and degradability | : | Biodegradable |

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Aquatic toxicity and other : No data data relating to ecotoxicity

13. Disposal considerations / Waste Disposal Method

: Wash down sewer as local regulations require, treat in a biological treatment system or burn.

14. Transport information

: To protect quality, store in well-closed containers in a dry and cool place. Handle containers with care.

15. Regulatory information

: None

16. Other information

: None

The information in this MSDS was obtained from reliable sources. However, the data is provided without warranty, express or implied regarding its correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of the product and to assume liability for loss, injury, damage or expense resulting from the improper use of the product. To the best of our knowledge, there exists no released or disclosed information concerning allergic study of the product by any authoritative research institution whereof governmental or otherwise.

N/A = NOT APPLICABLE