

SAFETY DATA SHEET

1. Product and Company Identification

Product Name: **Light Eleven MRS-200 (Magnetic particle solution)**
 Company Name: Denshijiki Industry Co., Ltd.
 Address: 5-6-20 Ukima, Kita-Ku, Tokyo
 Section in Charge: Development department
 Telephone: +81-3-5970-8681 FAX: +81-3-5970-8680
 Emergency Telephone: Same as the section in charge
 Date of Creation: May 18, 2001 Date of Revision: January 21, 2021
 Reference Number: SDS15122-08e
 Product Code: 15122
 Recommended Uses and Restrictions on Use: Magnetic particle testing (oil-based method)

2. Hazards Identification

GHS Classification

Physical Hazards	Flammable liquids	Category 4
Health Hazards	Acute toxicity (oral)	Not classified
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Not classified
	Aspiration hazard	Category 1

GHS Label Elements



Pictograms:

Signal Word: Danger

Hazard Statement: Combustible liquid
 Causes skin irritation
 May be fatal if swallowed and enters airways

Precautionary Statement:

Prevention	Do not handle until all safety precautions have been read and understood. Keep away from ignition sources including heat, sparks and high-temperature materials. No smoking Wear protective gloves/eye protection/face protection/protective clothing. Use only outdoors or in a well-ventilated area and avoid breathing mist/vapors. Or avoid ingestion. Do not eat or drink when using this product. Wash hands thoroughly after handling.
Response	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

IF ON SKIN (or in hair): Wash with plenty of water and soap.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

In case of fire: Use dry chemical, foam, or carbon dioxide fire extinguishers.

Storage Store in a cool, well-ventilated place, away from direct sunlight.

Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container at an approved waste disposal plant in accordance with local/regional/national regulations.

3. Composition/Information on Ingredients

Substance/Mixture: Substance

Chemical Name or Common Name	Content (%)	CAS No.
n-Dodecane	≥ 98.0	112-40-3

4. First Aid Measures

- IF INHALED : Remove person to fresh air and keep comfortable for breathing. Cover with a blanket, keep warm and at rest, and immediately get medical attention as needed.
In case of no breathing or weak breathing, loosen clothing, clear their airway and practice artificial respiration.
- IF ON SKIN : Take off contaminated clothing immediately and wash skin with plenty of water and soap. Take off contaminated clothing and wash it before reuse.
- IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse for at least 15 minutes, and then get medical attention.
- IF SWALLOWED : Do NOT induce vomiting. Get medical attention. If the product remains in the mouth, rinse thoroughly.
- Most Important Signs and Symptoms, Acute and Delayed : If swallowed, the product may irritate gastric mucosa and cause vomiting. If this product is inhaled to the lungs while vomiting, it may cause chemical pneumonia which can be fatal.

5. Firefighting Measures

- Extinguishing Media : It is possible to use dry chemicals, carbon dioxide, foam, or dry sand.
For initial fires, use dry chemical, foam, or dry sand.
For large-scale fires, it is possible to use firefighting foam to smother the fire.
- Inappropriate Extinguishing Media : Straight stream of water
- Specific Hazards : Vapor forms an explosive mixture with air.
If generated vapor comes into contact with things such as hot metal surfaces, it can cause burning and explosion.
Heating can cause explosion of the container.
When the product is burned, carbon monoxide and other gasses can be generated.
- Special Firefighting Procedures : Extinguish the source of the fire. Cool down surroundings by spraying them with water.
Keep unnecessary personnel away from the fire and the surrounding area.

- Protection of Firefighters : Perform firefighting from the windward side, and be sure to wear protective equipment. If skin contact is possible, use impermeable protective equipment and gloves.
Firefighting personnel must wear protective equipment such as breathing apparatus to prevent oxygen deficiency and inhalation of toxic gases.

6. Accidental Release Measures

- Personal Precautions, Protective Equipment and Emergency Procedures : Wear protective equipment during firefighting operations.
Remove nearby potential sources of ignition immediately.
- Environmental Precautions : Do not let the discharged product drain into water systems in order to prevent any environmental impact.
- Method and Materials for Containment and Cleaning Up : For small-scale leakage, collect the material by absorbing released material with earth, sand, sawdust, waste cloth, or other materials.
For large-scale leakage, stop the flow by creating an embankment around the leakage, then cover the liquid surface with foam and collect the liquid in containers.
- Measures to Prevent Secondary Accidents : Inform relevant organizations immediately to prevent further accidents and expansion.
Remove nearby potential ignition sources immediately and prepare fire extinguishing media.

7. Handling and Storage

Handling

- Technical Measures : Amounts larger than the designated amount must be handled in a factory, a storage facility, or a laboratory in compliance with the standards required by the relevant regulations.
Avoid contact with heat, sparks, flames, high-temperature materials, etc. Do not evaporate it unnecessarily. No smoking.
Wear protective equipment if skin or eye contact is possible.
Repair of or processing using machinery or other equipment containing hazardous materials must be carried out in a safe location after completely removing the material.
Ventilate well if handling it indoors.
Choose an explosion-proof ventilation system to install if necessary.
- Precautions for Safe Handling : Avoid contact and storage with halogens, strong acids, alkalis, and oxidizing materials.
Keep tightly sealed and avoid contact with strong oxidizing agents.

Storage

- Proper Storage Conditions : Store in a cool, well-ventilated place, away from direct sunlight.
Keep container tightly closed. Store locked up.
Label as hazardous material and then store.
- Safe Packaging Materials : Do not pressurize the container. If pressurized, the container may burst.

8. Exposure Controls/Personal Protection

- Control Levels : Not established.
- Permissible Exposure Levels : Currently, no useful information is available (Japan Society for Occupational Health, ACGIH)

Engineering Measures	:	If mist is generated, the source must be tightly sealed or ventilation equipment must be installed. Install a shower and an eye washer near the handling location.
Protective Equipment		
Respiratory System Protection	:	Wear a gas mask (for organic gasses) if necessary.
Hand Protection	:	Wear oil resistant gloves for long time or repeated contact.
Eye Protection	:	Wear standard glasses for splash prevention.
Skin and Body Protection	:	Wear oil resistant long-sleeve work clothing for long-time handling or contact.

9. Physical and Chemical Properties

Physical state	:	Liquid
Color	:	Colorless and transparent
Odor	:	Faint paraffin odor
Melting point/ freezing point	:	-7.5°C
Boiling point or initial boiling point and boiling range	:	209-212°C
Flammability	:	Flammable liquids
Lower and upper explosion limit / flammability limit	:	0.7-5.5vol%
Flash point	:	85°C
Auto-ignition temperature	:	Not lower than 200°C
Decomposition temperature	:	No data available
pH	:	No data available
Kinematic viscosity	:	1.383 mPa·s (25°C)
Solubility	:	Water: 0.05 g/L (20°C) Ethanol: Readily soluble
Partition coefficient n-octanol/water (log value)	:	6.80
Vapor pressure	:	No data available
Density and/or relative density	:	0.753 g/cm ³ (15°C)
Relative vapor density	:	5.9 (Air = 1)
Particle characteristics	:	No data available

10. Stability and Reactivity

Chemical Reactivity and Stability	:	The product is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions	:	Keep tightly sealed and avoid contact with strong oxidizing agents.
Conditions to Avoid	:	Contact with incompatible materials.
Incompatible Materials	:	Oxidizing agents and the like.
Hazardous Decomposition Products	:	Smoke, carbon monoxide and other gasses can be generated if the product is burned.

11. Toxicological Information

Acute Toxicity (oral)	:	LD ₅₀ ≥ 20 mL/kg (rat)
Acute Toxicity (inhalation)	:	LC ₅₀ > 200 ppm (rat) Classification not possible as the category cannot be identified. The standard value for gasses was applied because the test concentration (142 ppm) is lower than 90% (161 ppm) of the saturated vapor concentration.
Skin Corrosion and Skin Irritation	:	Medium skin irritation to rabbits
Serious Eye Damage or Eye Irritation	:	No data available
Respiratory Sensitization or Skin Sensitization	:	No data available
Germ Cell Mutagenicity	:	AMES test: Negative
Carcinogenicity	:	No data available
Reproductive Toxicity	:	No reproductive toxicity for mixtures of n- and iso-paraffins and cycloalkanes mainly with C10-13.
Specific Target Organ Toxicity, Single Exposure	:	No data available
Specific Target Organ Toxicity, Repeated Exposure	:	NOAEL = 2,000 mg/m ³ by 12-week inhalation test for mixtures of n- and iso-paraffins and cycloalkanes mainly composed of C9-13.
Aspiration hazard	:	A report indicates that this product is a hydrocarbon, the kinematic viscosity is 1.85 mm ² /s and when humans inhale it into their lungs, it causes oil pneumonia or chemical pneumonia.

12. Ecological Information

Ecotoxicity	
Acute Toxicity	: No data available
Chronic Toxicity	: No data available
Persistency/Degradability	: No data available
Bioaccumulative Potential	: No data available
Mobility in Soil	: No data available
Hazardous to the Ozone Layer	: No data available

13. Disposal Considerations

Have contents/container disposed of by an industrial waste disposal contractor licensed by the prefectural governor.

No dumping is allowed.

If this product is disposed of by landfill, incinerate it by using an incineration system in advance and check that the burned residue does not exceed the criteria defined in the Order for Enforcement of the Waste Management and Public Cleansing Act.

If this product is burned, burn it in a safe place using a method that does not cause harm or damage due to burning or explosion and have someone stand guard.

14. Transport information

UN Hazard Class : Not restricted

UN No. : Not restricted

Not regulated for transport of dangerous goods (IATA, IMDG)

Follow other related laws and regulations.

15. Regulatory Information

Comply with the applicable laws and regulations regarding this product in each country/region.

16. Other Information

This Safety Data Sheet was prepared in accordance with JIS Z 7253:2019 to provide users of this product with reference information to ensure safe handling. Users are responsible for taking appropriate measures for individual handling conditions with reference to this SDS.

This SDS does not represent any guarantee of safety.

Major references

Safety Data Sheets (SDS) provided by raw material manufacturers

Japanese Standards Association (JIS) JIS Z 7253:2019 "Hazard communication of chemicals based on GHS"

NITE Chemical Risk Information Platform (CHRIP)
