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

1.1. Product identifier

Product form: Substance

CAS No: 7439-96-5

Product code: 4498B

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture: Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number: + 91 22 6663 6663 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable solids, Category 1
H228

Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H260

Full text of classification categories and H statements: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

F; R11
F; R15

Full text of R-phrases: see section 16
Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

GHS02

Signal word (CLP): Danger

Hazard statements (CLP):
H228 - Flammable solid
H260 - In contact with water releases flammable gases which may ignite spontaneously

Precautionary statements (CLP):
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P223 - Do not allow contact with water
P231+P232 - Handle under inert gas. Protect from moisture
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ventilating/lighting/... equipment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P370+P378 - In case of fire: Use ... to extinguish
P402+P404 - Store in a dry place. Store in a closed container
P501 - Dispose of contents/container to ...

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name: MANGANESE (METAL) FLAKES
CAS No: 7439-96-5

Full text of R- and H-phrases: see section 16

3.2. Mixture
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
First-aid measures after eye contact: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Rinse mouth out with water. If you feel unwell, seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed
No additional information available

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).
Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Flammable solid.
Explosion hazard: May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Wear fire/flame resistant/retardant clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Use personal protective equipment as required.
Emergency procedures: Stop release.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Clear up rapidly by scoop or vacuum.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapours are flammable. Keep away from any possible contact with water, because of violent reaction and possible flash fire.

Precautions for safe handling: No naked lights. No smoking. Protect from moisture. Handle under inert gas.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/… equipment.
### Storage conditions
- Keep away from any possible contact with water, because of violent reaction and possible flash fire.

### Incompatible materials
- No additional information available

### 7.3. Specific end use(s)
No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters
No additional information available

#### 8.2. Exposure controls

<table>
<thead>
<tr>
<th>Protection Type</th>
<th>Suggested Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand protection</td>
<td>Protective gloves</td>
</tr>
<tr>
<td>Eye protection</td>
<td>Chemical goggles or safety glasses</td>
</tr>
<tr>
<td>Skin and body protection</td>
<td>Wear suitable protective clothing</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>Wear appropriate mask</td>
</tr>
</tbody>
</table>

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>54.94 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Bright silver grey.</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>1260 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>1900 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable solid, in contact with water releases flammable gases which may ignite spontaneously</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
**MANGANESE (METAL) FLAKES**

**Safety Data Sheet**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>7.3 g/cm³</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: Reacts with water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. **Other information**

No additional information available

**SECTION 10: Stability and reactivity**

10.1. **Reactivity**

No additional information available

10.2. **Chemical stability**

Flammable solid. May form flammable/explosive vapour-air mixture.

10.3. **Possibility of hazardous reactions**

In contact with water releases flammable gases which may ignite spontaneously.

10.4. **Conditions to avoid**


10.5. **Incompatible materials**

No additional information available

10.6. **Hazardous decomposition products**

May release flammable gases.

**SECTION 11: Toxicological information**

11.1. **Information on toxicological effects**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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MANGANESE (METAL) FLAKES
Safety Data Sheet

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations : Dispose of contents/container to ...
Additional information : Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 3208
UN-No. (IMDG) : 3208
UN-No. (IATA) : 3208
UN-No. (ADN) : 3208
UN-No. (RID) : 3208

14.2. UN proper shipping name
Proper Shipping Name (ADR) : METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
Proper Shipping Name (IMDG) : METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
Proper Shipping Name (IATA) : METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
Proper Shipping Name (ADN) : METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
Proper Shipping Name (RID) : METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
### 14.3. Transport hazard class(es)

| Transport document description (ADR) | UN 3208 METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S., 4.3, III, (E) |
| Transport document description (IMDG) | UN 3208 METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S., 4.3, III |
| Transport document description (IATA) | UN 3208 METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S., 4.3, III |
| Transport document description (ADN) | UN 3208 METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S., 4.3, III |
| Transport document description (RID) | UN 3208 METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S., 4.3, III |

#### ADR
- Transport hazard class(es) (ADR): 4.3
- Danger labels (ADR): 4.3

#### IMDG
- Transport hazard class(es) (IMDG): 4.3
- Danger labels (IMDG): 4.3

#### IATA
- Transport hazard class(es) (IATA): 4.3
- Hazard labels (IATA): 4.3

#### ADN
- Transport hazard class(es) (ADN): 4.3
- Danger labels (ADN): 4.3

#### RID
- Transport hazard class(es) (RID): 4.3
- Danger labels (RID): 4.3
14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group (ADR)</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (IMDG)</td>
<td>III</td>
</tr>
<tr>
<td>Packing group (IATA)</td>
<td>III</td>
</tr>
<tr>
<td>Packing group (ADN)</td>
<td>III</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>III</td>
</tr>
</tbody>
</table>

14.5. Environmental hazards

| Dangerous for the environment | No  |
| Marine pollutant              | No  |
| Other information             | No supplementary information available |

14.6. Special precautions for user

- **Overland transport**

  | Classification code (ADR) | W2   |
  | Special provision (ADR)   | 274, 557 |
  | Limited quantities (ADR)  | 1kg  |
  | Excepted quantities (ADR) | E1   |
  | Packing instructions (ADR) | P410, IBC08, R001 |
  | Special packing provisions (ADR) | B4 |
  | Mixed packing provisions (ADR) | MP14 |
  | Portable tank and bulk container instructions (ADR) | T1 |
  | Portable tank and bulk container special provisions (ADR) | TP33 |
  | Tank code (ADR)            | SGAN |
  | Vehicle for tank carriage  | AT   |
  | Transport category (ADR)   | 3    |
  | Special provisions for carriage - Packages (ADR) | V1   |
  | Special provisions for carriage - Bulk (ADR) | VC1, VC2, AP3, AP4, AP5 |
  | Special provisions for carriage - Loading, unloading and handling (ADR) | CV23 |
  | Hazard identification number (Kemler No.) | 423 |

Orange plates:

| Tunnel restriction code (ADR) | E    |
| EAC code                     | 4W   |

- **Transport by sea**

  | Special provision (IMDG) | 223, 274 |
  | Limited quantities (IMDG) | 1 kg   |
  | Excepted quantities (IMDG) | E1   |
  | Packing instructions (IMDG) | P410 |
  | Packing provisions (IMDG) | PP31, PP40 |
  | IBC packing instructions (IMDG) | IBC08 |
  | IBC special provisions (IMDG) | B4   |
  | Tank instructions (IMDG)   | T1    |
  | Tank special provisions (IMDG) | TP33 |
  | EmS-No. (Fire)             | F-G   |
  | EmS-No. (Spillage)         | S-N   |
MANGANESE (METAL) FLAKES
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Stowage category (IMDG) : E
Stowage and handling (IMDG) : SW2, H1
Segregation (IMDG) : SG26
MFAG-No : 138

- Air transport
PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y476
PCA limited quantity max net quantity (IATA) : 10kg
PCA packing instructions (IATA) : 485
PCA max net quantity (IATA) : 25kg
CAO packing instructions (IATA) : 491
CAO max net quantity (IATA) : 100kg
Special provision (IATA) : A3
ERG code (IATA) : 4W

- Inland waterway transport
Classification code (ADN) : W2
Special provisions (ADN) : 274, 557
Limited quantities (ADN) : 1 kg
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Provisions for handling and stowage of the cargo (ADN) : HA08
Number of blue cones/lights (ADN) : 0

- Rail transport
Classification code (RID) : W2
Special provision (RID) : 274, 557
Limited quantities (RID) : 1kg
Excepted quantities (RID) : E1
Packing instructions (RID) : P410, IBC08, R001
Special packing provisions (RID) : B4
Mixed packing provisions (RID) : MP14
Portable tank and bulk container instructions (RID) : T1
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAN
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W1
Special provisions for carriage – Bulk (RID) : VC1, VC2, AP3, AP4, AP5
Special provisions for carriage – Loading and unloading (RID) : CW23
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 423

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable
SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
MANGANESE (METAL) FLAKES is not on the REACH Candidate List
MANGANESE (METAL) FLAKES is not on the REACH Annex XIV List

15.1.2. National regulations

Germany
AwSV/VwVwS Annex reference: Water hazard class (WGK) nwg, non-hazardous to water (KBwS-Beschluss; WGK No 1443)

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Flam. Sol. 1  Flammable solids, Category 1
Water-react. 1 Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H228 Flammable solid
H260 In contact with water releases flammable gases which may ignite spontaneously
R11 Highly flammable
R15 Contact with water liberates extremely flammable gases
F Highly flammable

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.