MATERIAL SAFETY DATA SHEET
Sodium Metal

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium Metal
Synonyms: Natrium.
Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
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<tr>
<td>7440-23-5</td>
<td>Sodium</td>
<td>100</td>
<td>231-132-9</td>
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</table>

Hazard Symbols: F C
Risk Phrases: 14/15 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Potential Health Effects

Eye: May cause irreversible eye injury. Contact with eyes may cause severe irritation, and possible eye burns.
Skin: Causes skin burns. May cause deep, penetrating ulcers of the skin.
Ingestion: Causes gastrointestinal tract burns.
Inhalation: May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema.
Chronic: Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Reacts violently with water giving off flammable gas which may explode. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Flammable solid. May react violently or explosively on contact with water. May be ignited by heat, sparks, and flame. May re-ignite after fire is extinguished.

Extinguishing Media: DO NOT USE WATER! Do NOT use CO2 or halogenated extinguishing agents. Smother with dry sand, dry clay, dry ground limestone (CaCO3), or use approved Class D extinguishers.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not expose spill to water.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 7440-23-5:

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Color: light silver

Odor: odorless
pH: Not applicable
Vapor Pressure: 1 mm Hg @ 440 deg C
Viscosity: 0.680cp @ 100C
Boiling Point: 1621 deg F (882.78°C)
Freezing/Melting Point: 208 deg F (97.78°C)
Autoignition Temperature: 250 deg F (121.11 deg C)
Flash Point: Not applicable.
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: Reacts violently with water
Specific Gravity/Density: 0.9684 @ 20 C
Molecular Formula: Na
Molecular Weight: 22.99

Section 10 - Stability and Reactivity

Chemical Stability: Reacts violently with water. Reacts violently with a broad range of materials.
Conditions to Avoid: Dust generation, exposure to moist air or water.
Incompatibilities with Other Materials: Water, strong oxidizing agents, strong acids, halogens, chloroform, sulfur dioxide.
Hazardous Decomposition Products: Irritating and toxic fumes and gases, sodium oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 7440-23-5: VY0686000
LD50/LC50: RTECS: Not available.
Carcinogenicity: Sodium - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>Parameter</th>
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<th>RID/ADR</th>
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USA RQ: CAS# 7440-23-5: 10 lb final RQ; 4.54 kg final RQ

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols: F C

Risk Phrases:
- R 14/15 Reacts violently with water liberating extremely flammable gases.
- R 34 Causes burns.

Safety Phrases:
- S 5 Keep contents under ... (appropriate liquid to be specified by the manufacturer).
- S 8 Keep container dry.
- S 43H In case of fire, use dry chemical, soda ash, lime or sand. (Do not use water or foam).
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
- CAS# 7440-23-5: 2

Canada
- CAS# 7440-23-5 is listed on Canada's DSL List

US Federal
- TSCA
- CAS# 7440-23-5 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 10/13/1998
Revision #4 Date 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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