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| Health |
| Fire |
| Reactivity |
| Personal Protection |

Material Safety Data Sheet

Neostigmine Methyl Sulfate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Neostigmine Methyl Sulfate

Catalog Codes: SLN1171

Synonyms: 3-[[[(Dimethylamino)Carbonyl]oxy]-N,N,N-Trimethylbenzenaminium Methyl Sulfate; Proserin; Eustigmin Methylsulfate; Hodostin.

Contact Information:

Sciencelab.com, Inc.

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International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

| CAS# | Chemical Name | Percent | EINECS/ELINCS |
|---------|----------------------------|---------|---------------|
| 51-60-5 | Neostigmine Methyl Sulfate | ca. 100 | 200-109-5 |

Hazard Symbols: XI T+

Risk Phrases: 26/27/28 36/37/38 42/43

Section 3: Hazards Identification

EMERGENCY OVERVIEW: Appearance: white crystals.

Warning!: Causes eye and skin irritation. May cause digestive tract irritation. Causes respiratory tract irritation. Irritant. May cause sensitization by inhalation and by skin contact. Highly toxic. May be fatal if inhaled, absorbed through the skin or swallowed.

Target Organs: Respiratory system, eyes, skin, nerves, skeletal muscle.

Potential Health Effects:

Eye: Causes eye irritation. May cause chemical conjunctivitis.

Skin: Causes skin irritation. May be fatal if absorbed through the skin. May cause sensitization by skin contact.

Ingestion: May be fatal if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause fatigability and generalized weakness, involuntary twitching s, and paralysis at the neuromuscular junctions of skeletal muscles. S mall exposures may increase skeletal muscle contractions.

Inhalation: May be fatal if inhaled. Causes respiratory tract irritation. Can produce delayed pulmonary edema. May cause respiratory sensitization. May cause central nervous system effects such as nausea and headache. Central Nervous System effects include confusion, ataxia, slurred speech, loss of reflexes, generalized convulsions, coma and respiratory paralysis that may result in death.

Chronic: Effects may be delayed.

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: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately. Wash mouth out with water. Induce vomiting only when instructed to do so by a physician.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5: Fire and Explosion Data

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 4; Flammability: 0; Instability: 0

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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7: Handling and Storage

Handling: Minimize dust generation and accumulation. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood. Wash clothing before reuse.

Storage: Store in a cool, dry place. Store in a tightly closed container. Poison room locked.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits:

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|----------------------------|-------------|-------------|-------------------|
| Neostigmine Methyl Sulfate | none listed | none listed | none listed |

OSHA Vacated PELs: Neostigmine Methyl Sulfate: No OSHA Vacated PELs are listed for this chemical.

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. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9: Physical and Chemical Properties

Physical State: Crystals

Appearance: white

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 146 deg C

Decomposition Temperature: Not available.

Solubility: 1g/10ml water

Specific Gravity/Density: Not available.

Molecular Formula: C₁₃H₂₂N₂O₆S

Molecular Weight: 334.39

Section 10: Stability and Reactivity Data

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials: Oxidizing agents.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, sulfur oxides (SO_x), including sulfur oxide and sulfur dioxide.

Hazardous Polymerization: Has not been reported.

Section 11: Toxicological Information

RTECS#:

CAS#: 51-60-5: CY1225000

LD50/LC50: CAS# 51-60-5: Oral, mouse: LD50 = 7500 ug/kg; Oral, mouse: LD50 = 10 mg/kg;

Carcinogenicity: CAS# 51-60-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Other Studies: No data available.

Section 12: Ecological Information

Section 13: Disposal Considerations

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14: Transport Information

| | US DOT | IATA | RID/ADR | IMO | Canada TDG |
|-----------------------|--|------|---------|-----|---------------------------|
| Shipping Name: | DOT regulated - small quantity provisions apply (see 49CFR173.4) | | | | No information available. |
| Hazard Class: | | | | | |
| UN Number: | | | | | |
| Packing Group: | | | | | |

Section 15: Other Regulatory Information

US FEDERAL:

TSCA: CAS# 51-60-5 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List: None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules: None of the chemicals in this product are under a Chemical Test Rule.

Section 12b: None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule: None of the chemicals in this material have a SNUR under TSCA.

SARA:

CERCLA Hazardous Substances and corresponding RQs: None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances: None of the chemicals in this product have a TPQ.

Section 313: No chemicals are reportable under Section 313.

Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE: CAS# 51-60-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations:

European Labeling in Accordance with EC Directives:

Hazard Symbols: XI T+

Risk Phrases: R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed. R 36/37/38 Irritating to eyes, respiratory system and skin. R 42/43 May cause sensitization by inhalation and skin contact.

Safety Phrases: S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S 28A After contact with skin, wash immediately with plenty of water.

WGK (Water Danger/Protection): CAS# 51-60-5: No information available.

Canada - DSL/NDSL: CAS# 51-60-5 is listed on Canada's DSL List.

Canada - WHMIS: This product has a WHMIS classification of D2B, D1A.

Canadian Ingredient Disclosure List:

Exposure Limits:

Section 16: Other Information

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