



Material Safety Data Sheet

| NFPA | HMIS | Personal Protective Equipment | | | | | | |
|---------------|---|-------------------------------|---|-------------|---|------------|---|--|
| | <table><tr><td>Health Hazard</td><td>3</td></tr><tr><td>Fire Hazard</td><td>1</td></tr><tr><td>Reactivity</td><td>0</td></tr></table> | Health Hazard | 3 | Fire Hazard | 1 | Reactivity | 0 | |
| Health Hazard | 3 | | | | | | | |
| Fire Hazard | 1 | | | | | | | |
| Reactivity | 0 | | | | | | | |
| | | See Section 15. | | | | | | |

Section 1. Chemical Product and Company Identification

Page Number: 1

| | | | |
|----------------------------|--|--|---|
| Common Name/ Trade Name | Neostigmine Methyl Sulfate | Catalog Number(s). | N3079 |
| | | CAS# | 51-60-5 |
| Manufacturer | SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248 | RTECS | CY1225000 |
| | | TSCA | TSCA 8(b) inventory: No products were found. Not listed on TSCA 8(b) Inventory. |
| Commercial Name(s) | Hodosin; Neostigmeth; Normastigmin; Neostigmine metilsulfate; Polstigmine; Proserin; Proserine methyl sulfate; Prostigmin methylsulfate; Stigmanol methyl sulfate; Stigmosan methyl sulfate; Synstigmine; Syntostigmin; Syntostigmine; Vagostigmin; Vagostigmine methyl sulfate; Eustigmin methylsulfate; Leostigmine methyl sulfate; Neoeserine methyl sulfate; Neostigmine monomethylsulfate; Normastigmin; Pholostigmin methyl sulfate | CI# | Not available. |
| Synonym | (3-Hydroxyphenyl)trimethylammonium methyl sulfate dimethylcarbamic ester; (m-Hydroxyphenyl)trimethylammonium methyl sulfate dimethylcarbamate; 3-(Dimethylcarbamoxy)phenyl trimethylammonium methyl sulfate; Ammonium, (3-(dimethylcarbamoyloxy)phenyl)trimethyl-, methylsulfate; Ammonium, (m-hydroxyphenyl)trimethyl-, methyl sulfate, dimethylcarbamate; Carbamic acid, dimethyl-, ester with m-hydroxyphenyl)trimethylammonium methyl sulfate; Carbamic acid, N,N-dimethyl-, 3-(trimethylammonio) phenyl ester, methylsulfate; Carbamic acid, N,N-dimethyl-, 3-dimethylaminophenyl ester, methosulfate; Dimethylcarbamic ester of 3-oxyphenyl)trimethylammonium methyl sulfate; Benzenaminium, 3-[[[(dimethylamino)carbonyl]oxy]-N,N,N-trimethyl-, methyl sulfate | IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 | |
| Chemical Name | Benzenaminium, 3-(((dimethylamino)carbonyl)oxy)-N,N,N-trimethyl-, methyl sulfate | | |
| Chemical Family | Not available. | | |

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|-----------------------------------|---|-----------------------|
| Neostigmine Methyl Sulfate | | Page Number: 2 |
| Chemical Formula | C13-H22-N2-O6-S | |
| Supplier | SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248 | |

| Section 2. Composition and Information on Ingredients | | | | | |
|---|---------|---|--------------|--------------|-------------|
| | | Exposure Limits | | | |
| Name | CAS # | TWA (mg/m³) | STEL (mg/m³) | CEIL (mg/m³) | % by Weight |
| 1) Neostigmine Methyl Sulfate | 51-60-5 | | | | 100 |
| | | | | | |
| Toxicological Data on Ingredients | | Neostigmine Methyl Sulfate: ORAL (LD50): Acute: 7.5 mg/kg [Mouse]. | | | |

| Section 3. Hazards Identification | |
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| Potential Acute Health Effects | Very hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Severe over-exposure can result in death. |
| Potential Chronic Health Effects | CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. |

| Section 4. First Aid Measures | |
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| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs. |
| Skin Contact | Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used. |
| Serious Skin Contact | Not available. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Serious Inhalation | Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention. |
| Ingestion | If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately. |
| Serious Ingestion | Not available. |

| Section 5. Fire and Explosion Data | |
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| Flammability of the Product | May be combustible at high temperature. |
| Auto-Ignition Temperature | Not available. |
| Flash Points | Not available. |
| Flammable Limits | Not available. |
| Products of Combustion | These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...). |
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| Fire Hazards in Presence of Various Substances | Slightly flammable to flammable in presence of heat. |
| Explosion Hazards in Presence of Various Substances | Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet. |
| Special Remarks on Fire Hazards | Material in powder form, capable of creating a dust explosion. As with most organic solids, fire is possible at elevated temperatures |
| Special Remarks on Explosion Hazards | Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. |

Section 6. Accidental Release Measures

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| Small Spill | Use appropriate tools to put the spilled solid in a convenient waste disposal container. |
| Large Spill | Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas, dike if needed. Eliminate all ignition sources. Call for assistance on disposal. |

Section 7. Handling and Storage

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| Precautions | Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents. |
| Storage | Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 0°C (32°F). Freeze. |

Section 8. Exposure Controls/Personal Protection

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| Engineering Controls | Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. |
| Personal Protection | Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. |
| Personal Protection in Case of a Large Spill | Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. |
| Exposure Limits | Not available. |

Section 9. Physical and Chemical Properties

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|--------------------------------------|--|--------------|----------------|
| Physical state and appearance | Solid. (Powdered solid. Crystalline powder.) | Odor | Not available. |
| Molecular Weight | 334.4 g/mole | Taste | Bitter. |
| pH (1% soln/water) | Not available. | Color | White. |
| Boiling Point | Not available. | | |
| Melting Point | 142°C (287.6°F) - 144 C. | | |
| Critical Temperature | Not available. | | |
| Specific Gravity | Not available. | | |
| Vapor Pressure | Not applicable. | | |

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| Neostigmine Methyl Sulfate | | Page Number: 4 |
|-----------------------------------|--|-----------------------|
| Vapor Density | Not available. | |
| Volatility | Not available. | |
| Odor Threshold | Not available. | |
| Water/Oil Dist. Coeff. | Not available. | |
| Ionicity (in Water) | Not available. | |
| Dispersion Properties | See solubility in water. | |
| Solubility | Soluble in cold water. Solubility in Water: 1 g/10 ml. Soluble in alcohol. | |

| Section 10. Stability and Reactivity Data | | |
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| Stability | The product is stable. | |
| Instability Temperature | Not available. | |
| Conditions of Instability | Excess heat, incompatible materials, dust generation. | |
| Incompatibility with various substances | Reactive with oxidizing agents | |
| Corrosivity | Not available. | |
| Special Remarks on Reactivity | Not available. | |
| Special Remarks on Corrosivity | Not available. | |
| Polymerization | Will not occur. | |

| Section 11. Toxicological Information | | |
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| Routes of Entry | Inhalation. Ingestion. | |
| Toxicity to Animals | Acute oral toxicity (LD50): 7.5 mg/kg [Mouse]. | |
| Chronic Effects on Humans | Not available. | |
| Other Toxic Effects on Humans | Very hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation. | |
| Special Remarks on Toxicity to Animals | Not available. | |
| Special Remarks on Chronic Effects on Humans | May cause adverse reproductive effects based on animal test data. | |
| Special Remarks on other Toxic Effects on Humans | Acute Potential Health Effects Skin: Can cause skin irritation. Eyes: Can cause eye irritation. Inhalation: Can cause respiratory tract irritation. Ingestion: Toxic. Harmful if swallowed. Can cause nausea, vomiting, diarrhea, abdominal cramping, flatulence, increased peristalsis, increased oral secretions, urinary frequency, visual changes . May affect respiration (respiratory stimulation, respiratory depression, dyspnea, respiratory arrest), behavior/central nervous system/autonomic nervous system (loss of consciousness/coma, convulsions, dizziness, headache, drowsiness, asghenia, parasympathomimetic), cardiovascular system (cardiac arrest, hypotension, tachycardia, bradycardia, atrioventricular block). May cause anaphylaxis, an allergic reaction, musculoskeletal system (muscle cramps, spasms, and fasciculations, joint pain). May cause skin rash, hives, flushing Medical Conditions Aggravated by Exposure: hypersensitivity to cholinergics or bromide; mechanical obstruction of GI or urinary tract; peritonitis; asthma; peptic ulcer; cardiovascular conditions; hyperthyroidism; seizure disorder. | |


Section 12. Ecological Information

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| Ecotoxicity | Not available. |
| BOD5 and COD | Not available. |
| Products of Biodegradation | Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. |
| Toxicity of the Products of Biodegradation | The products of degradation are less toxic than the product itself. |
| Special Remarks on the Products of Biodegradation | Not available. |

Section 13. Disposal Considerations

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| Waste Disposal | Waste must be disposed of in accordance with federal, state and local environmental control regulations. |
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Section 14. Transport Information

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| DOT Classification | CLASS 6.1: Poisonous material. |
| Identification | UNNA: 2811 : Toxic Solid, organic, n.o.s (Neostigmine Methyl Sulfate) PG: II |
| Special Provisions for Transport | Not available. |
| DOT (Pictograms) |  |

Section 15. Other Regulatory Information and Pictograms

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| Federal and State Regulations | No products were found. | |
| California Proposition 65 Warnings | <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.</p> <p>California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.</p> | |
| Other Regulations | <p>OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).</p> <p>EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 200-109-5).</p> <p>Canada: Not listed on Canadian Domestic Substance List (DSL) or Canadian Non-Domestic Substances List (NDSL)</p> <p>China: Not listed on National Inventory.</p> <p>Japan: Listed on National Inventory (ENCS).</p> <p>Korea: Listed on National Inventory (KECI).</p> <p>Philippines: Not listed on National Inventory (PICCS).</p> <p>Australia: Not listed on AICS.</p> | |
| Other Classifications | WHMIS (Canada) | CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). |
| | DSCL (EEC) | <p>R28- Very toxic if swallowed.</p> <p>S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</p> |

HMIS (U.S.A.)

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|---------------------|---|
| Health Hazard | 3 |
| Fire Hazard | 1 |
| Reactivity | 0 |
| Personal Protection | E |

National Fire Protection Association (U.S.A.)

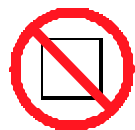
Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada)
(Pictograms)DSCL (Europe)
(Pictograms)TDG (Canada)
(Pictograms)ADR (Europe)
(Pictograms)

Protective Equipment



Gloves.



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Safety glasses.

Section 16. Other Information

MSDS Code

N0101

References

Not available.

Other Special Considerations

Major Use: Medication

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CALL (310) 516-8000**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.