

SAFETY DATA SHEET

Preparation Date: 2/29/2016

Revision Date: 2/29/2016

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: M1186
Product Name: MERCURIC SULFATE, POWDER, TECHNICAL

Other means of identification

Synonyms: Mercuric bisulfate
 Mercury persulfate
 Sulfuric acid, mercury(2+)salt(1:1)
 Sulfate mercurique (French)

CAS #: 7783-35-9
RTECS # OX0500000
Cl#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Laboratory reagent. Analytic Chemistry. Catalyst.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Danger

Hazard statements

Toxic if swallowed
Toxic in contact with skin
Toxic if inhaled
Causes skin irritation
Causes serious eye irritation
May cause damage to organs through prolonged or repeated exposure



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Very toxic to aquatic life with long lasting effects
Very toxic to aquatic life

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

Get medical advice/attention if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Components	CAS-No.	Weight %
Mercuric Sulfate 7783-35-9	7783-35-9	100

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact:

Toxic in contact with skin. Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact:

Flush eyes with water for 15 minutes. Get medical attention.

Inhalation:

Toxic by inhalation. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediate medical attention is required.

Ingestion:

Toxic if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes serious eye irritation. Causes skin irritation. May cause gastrointestinal disturbances. Abdominal pain. Ingestion may cause vomiting and nausea. Mercury poisoning also causes sore gums, stomatitis, foul breath, loss of teeth, metallic taste in mouth, increased salivation, personality changes, tremors, fatigue, insomnia, dizziness, headache, muscle weakness, muscle or joint pain, memory loss, peripheral neuropathy. May affect the kidneys (renal failure), liver, blood, and brain. Dyspnea (Difficulty breathing and shortness of breath). Coughing and wheezing.

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media:

No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products:	This product is not flammable. However, if it is involved in a fire the following can be released: mercury oxides, sulfur oxides
Specific hazards:	Mercuric sulfate decomposes when exposed to water for form corrosive Sulfuric acid
<u>Special Protective Actions for Firefighters</u>	
Specific Methods:	No information available.
Special Protective Equipment for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Do not ingest. Do not breathe vapours/dust. Keep away from heat and sources of ignition. Protect from moisture. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Sensitive to light. Store in light-resistant containers. Protect from moisture. Moisture sensitive. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents. Metals. Reducing agents. Strong acids. Acetylene. Ammonia. Water. Moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Mercuric Sulfate 7783-35-9	None	0.05 mg/m ³ TWA (as Hg) 0.1 mg/m ³ Ceiling (as Hg)	0.025 mg/m ³ TWA (as Hg)	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Mercuric Sulfate 7783-35-9	0.025 mg/m ³ TWA (as Hg)	0.025 mg/m ³ TWA (as Hg)	0.025 mg/m ³ TWA (as Hg)	0.025 mg/m ³ TWAEV (as Hg)

Australia and Mexico

Components	Australia	Mexico
Mercuric Sulfate 7783-35-9	0.025 mg/m ³ TWA (mercury compounds, divalent, inorganic)	0.05 mg/m ³ TWA (mercury inorganic compounds)

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. 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.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- Respiratory protection:** Wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent..
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Solid	Appearance: Crystalline powder.	Color: White.
Odor: Odorless.	Taste No information available	Formula: HgSO ₄
Molecular/Formula weight: 296.65 g/mole	Flammability: No information available	Flash point (°C): No data available
Flashpoint (°C/°F): No information available.	Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available
Lower Explosion Limit (%): No information available	Upper Explosion Limit (%): No information available	pH: No information available
Melting point/range(°C/°F): No information available	Boiling point/range(°C/°F): No information available	Decomposition temperature(°C/°F): No information available
Bulk density: No information available	Density (g/cm³): 6.47	Specific gravity: 6.47
Vapor pressure @ 20°C (kPa): No information available	Evaporation rate: No information available	Vapor density: No information available
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available
Viscosity: No information available	Miscibility: No information available	Solubility: Insoluble in Acetone Insoluble in Alcohol Insoluble in Ammonia Soluble in hydrochloric acid, hot dilute sulfuric acid, concentrated sodium chloride Reacts with water Decomposed by water into yellow and insoluble basic sulfate, and free sulfuric acid

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents, reducing agents, and metals
Reactive with strong acids
Mercuric sulfate reacts violently with hydrogen chloride
Mercuric sulfate decomposes when exposed to water to form corrosive sulfuric acid

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Exposure to light. Exposure to water. Exposure to moisture. Exposure to moist air. Incompatible materials.

Incompatible Materials: Oxidizing agents. Metals. Reducing agents. Strong acids. Acetylene. Ammonia. Water. Moisture.

Hazardous decomposition products: No information available

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: Mercuric sulfate is corrosive to metals such as iron, magnesium, zinc, lead, and copper

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Inhalation. Ingestion.

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (inhalation-gas) 100mg/l

ATEmix (inhalation-dust/mist) 0mg/l

Component Information

Mercuric Sulfate - 7783-35-9

LD50/oral/rat = 57 mg/kg Oral LD50 Rat

LD50/oral/mouse = 25 mg/kg

LD50/dermal/rat = No information available

LD50/dermal/rabbit = 625 mg/kg

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 57mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 25mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = 625mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Toxic in contact with skin. It can be absorbed through the skin. Causes skin irritation.

Eye Contact: Causes serious eye irritation.

Inhalation Toxic by inhalation. May cause nose, throat, and lung irritation. Symptoms may include coughing and wheezing, and shortness of breath. May cause tight feeling in chest and difficulty breathing.

Ingestion Toxic if swallowed. May cause nausea. May cause vomiting. May cause abdominal pain. May cause stomatitis, gingival irritation, foul breath, loosening of teeth. High or repeated exposure can cause Mercury poisoning. Mercury poisoning causes sore gums, personality changes, tremor/"shakes" (often with shaky handwriting), clumsiness, fatigue, irritability and increased saliva. Other changes may include serious personality changes memory loss, extreme shyness, weakness, stomatitis, gingivitis, loss of teeth, gastrointestinal disturbances, metallic taste, poor appetite/anorexia, this, abdominal discomfort, nausea, vomiting, weight loss, central nervous system effects, "pins and needles" (peripheral neuropathy). Exposures can also affect the liver, cause kidney damage, and may cause decreased visual acuity, and affect peripheral vision (the ability to see to the side). Brain damage can occur, especially if exposure continues. There may be similar effects in cases of acute inhalation.

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Inhalation/Ingestion: High or repeated exposure can cause Mercury poisoning. Mercury poisoning causes gastrointestinal upset/disturbances, sore gums, personality changes, tremors/shakes, clumsiness, fatigue, headache, dizziness or faintness, insomnia, irritability and increased saliva. Other changes may include memory loss, extreme shyness, joint or muscle pain, muscle weakness, stomatitis, gingivitis, loss of teeth, loss of appetite and weight. Exposure can also affect the liver, cause kidney damage, and may decrease visual activity. Brain damage can occur if exposure continues.
Eye contact: brown staining in the eye without visual impairment
Skin: Repeated skin contact can make the skin gray. Dermatitis can also occur. Prolonged or repeated inhalation may cause bronchitis with coughing, phlegm, and/or shortness of breath

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Mercuric Sulfate	Group 3 - monograph 58 [1993] (listed under Mercury inorganic compounds)	Group A4 - Not Classifiable as a Human Carcinogen (listed under Mercury inorganic compounds)	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: May cause adverse developmental effects
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure kidney. central nervous system. Peripheral Nervous System (PNS).
Target Organs: Kidneys. Central nervous system. Peripheral nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Mercuric Sulfate - 7783-35-9

Freshwater Algae Data: EC50 - Pseudokirchneriella subcapitata (green algae) 0.030 mg/l - 14 days
 EC50 - Microcoleus vaginatus (blue-green algae) 0.253 mg/l -14 days
Freshwater Fish Species Data: LC50 - Oncorhynchus gorbuscha (Pink Salmon) 0.14-0.220 mg/l - 7 days
 LC50 - Oncorhynchus nerka (Sockeye Salmon) 0.180-0.310 mg/l - 7 days

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
 Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
 Empty containers should be taken for local recycling, recovery or waste disposal. Do not re-use empty containers Dispose of as unused product.

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Mercuric Sulfate	None	None	None	None

14. TRANSPORT INFORMATION

DOT UN-No: UN1645

14. TRANSPORT INFORMATION

Proper Shipping Name: Mercury sulfates
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
ERG No: 151
Marine Pollutant Severe Marine Pollutant
DOT RQ (lbs): 10 lbs/4.54 kg
Special Provisions No Information available
Symbol(s): +, PP, R2

TDG (Canada)

UN-No: UN1645
Proper Shipping Name: Mercury sulfate
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant Marine Pollutant
Description: No information available

ADR

UN-No: UN1645
Proper Shipping Name: Mercury sulphate
Hazard Class: 6.1
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1645
Proper Shipping Name: Mercury sulphate
Hazard Class: 6.1
Subsidiary Risk: P
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant Marine Pollutant
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1645
Proper Shipping Name: Mercury sulphate
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1645
Proper Shipping Name: Mercury sulphate
Hazard Class: 6.1
Subsidiary Risk: No information available

14. TRANSPORT INFORMATION

Packing Group: II
Description: No information available

IATA

UN-No: UN1645
Proper Shipping Name: Mercury sulphate
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 6L
Special Provisions No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Mercuric Sulfate</i>	Present	Present KE-23132	Present	Present (1)-437	Present	Present	Present 231-992-5

U.S. Regulations

Mercuric Sulfate

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: sn 1177
New Jersey (EHS) List: Present (listed under Mercury compounds)
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Pennsylvania RTK - Special Hazardous Substances Present
New York Release Reporting - List of Hazardous Substances:
 = 10 lb RQ
Louisiana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Mercuric Sulfate</i>	Not Listed	Developmental (listed under Mercury and Mercury compounds)	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>Mercuric Sulfate</i>	= 10 lb final RQ	None	None	Mercury compounds	1%

U.S. TSCA

Product code: M1186

Product name: MERCURIC SULFATE,
POWDER, TECHNICAL

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Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Mercuric Sulfate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

D1A Very toxic materials

E Corrosive material

Mercuric Sulfate

D1A E

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Mercuric Sulfate	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Mercuric Sulfate	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Mercuric Sulfate	Not listed	Not listed

EU Classification

R-phrase(s)

R33 - Danger of cumulative effects.

R50 - Very toxic to aquatic organisms.

R53 - May cause long-term adverse effects in the aquatic environment.

R26/27/28 - Very toxic by inhalation, in contact with skin and if swallowed.

S -phrase(s)

S13 - Keep away from food, drink and animal feedingstuffs.

S28 - After contact with skin, wash immediately with plenty of water

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

S 1/2 - Keep locked up and out of the reach of children.

Components	Classification	Concentration Limits:	Safety Phrases
Mercuric Sulfate		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

T+ - Very toxic.

N - Dangerous for the environment.

T+



N

**16. OTHER INFORMATION**

Preparation Date: 2/29/2016
Revision Date: 2/29/2016
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) 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 SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. 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 SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet