

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Description:	Mercuric Sulfate (Certified ACS)
Cat No. :	M190I-100; M190I-500
Synonyms	Mercuric sulfate
CAS No	7783-35-9
Molecular Formula	Hg O4 S

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

Details of the supplier of the safety data sheet

Importer	Supplier
Fisher Scientific Korea	Fisher Scientific
D5,D6, Incheon Airport Logistics Complex	One Reagent Lane
150, Gonghangdong-Ro 296 Beon-Gil	Fair Lawn, NJ 07410
Jung-Gu, Incheon	Tel: (201) 796-7100
Tel: +82-1661-9555	
Fax: +82-2-2023-0603	

E-mail address	Chem.KR@thermofisher.com
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Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970
 CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887
 Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture
Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Acute Oral Toxicity	Category 2
Acute Dermal Toxicity	Category 1
Acute Inhalation Toxicity - Dusts and Mists	Category 2
Specific target organ toxicity - (repeated exposure)	Category 2

Environmental hazards

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

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Label Elements



Signal Word

Danger

Hazard Statements

H373 - May cause damage to organs through prolonged or repeated exposure

H410 - Very toxic to aquatic life with long lasting effects

H300 + H310 + H330 - Fatal if swallowed, in contact with skin or if inhaled

H400 - Very toxic to aquatic life

Precautionary Statements

Prevention

P262 - Do not get in eyes, on skin, or on clothing

P264 - Wash hands and face thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P284 - Wear respiratory protection

P273 - Avoid release to the environment

Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P330 - Rinse mouth

P321 - Specific treatment (see supplemental first aid instructions on this label)

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P310 - Immediately call a POISON CENTER or doctor

P361 + P364 - Take off immediately all contaminated clothing and wash it before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P320 - Specific treatment is urgent (see supplemental first aid instructions on this label)

P314 - Get medical advice/attention if you feel unwell

P391 - Collect spillage

Storage

P405 - Store locked up

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

NFPA

Health
4

Flammability
0

Instability
1

Physical hazards
N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

FSHM1901

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Component	Common Name	CAS No	Index No	Weight %
Mercuric sulfate	Mercury(II) sulfate; Mercury bisulfate	7783-35-9	KE-23132	99 - 100

Note

Note 1: The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

Skin Contact

Immediate medical attention is required. Wash off immediately with plenty of water for at least 15 minutes.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

No information available. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing. May cause adverse kidney effects. Symptoms may be delayed.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Very toxic. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Sulfur oxides.

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Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Evacuate personnel to safe areas. Avoid dust formation. Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe (dust, vapor, mist, gas).

Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Mercuric sulfate	7783-35-9	Not listed	TWA: 0.025 mg/m ³ Skin	(Vacated) Ceiling: 0.1 mg/m ³

Component	CAS No	European Union	The United Kingdom	Germany
Mercuric sulfate	7783-35-9	Not listed	TWA: 0.02 mg/m ³ 8 hr	TWA: 0.02 mg/m ³ (8 Stunden). AGW - exposure factor 8 TWA: 0.02 mg/m ³ (8 Stunden). MAK Höhepunkt: 0.16 mg/m ³ Haut

ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
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Mercuric sulfate	7783-35-9	Not listed
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Exposure Controls

Engineering Measures

Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Protective gloves

Skin and body protection

Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Personal protective equipment

Respiratory Protection

Use only those certified by the Korea Occupational Safety and Health Administration.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Recommended Filter type:

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

Prevent product from entering drains Do not allow material to contaminate ground water system Local authorities should be advised if significant spillages cannot be contained

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.) Off-white Powder Solid

Odor

Odorless

Odor Threshold

No data available

pH

1

50 g/l aq.sol

Melting Point/Range

No data available

Softening Point

No data available

Boiling Point/Range

No information available

Flash Point

No information available

Method - No information available

Evaporation Rate

Not applicable

Solid

Flammability (solid,gas)

No information available

Explosion Limits

No data available

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Vapor Pressure	negligible	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	6.470	
Bulk Density	No data available	
Water Solubility	reacts	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
Mercuric sulfate	7783-35-9	No data available

Autoignition Temperature	No data available	
Decomposition Temperature	450 °C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Molecular Formula	Hg O4 S
Molecular Weight	296.64

SECTION 10: STABILITY AND REACTIVITY

Reactivity
None known, based on information available

Chemical Stability
Stable under normal conditions. Decomposes in contact with water.

Possibility of Hazardous Reactions
Hazardous Polymerization Hazardous Reactions
Hazardous polymerization does not occur.
None under normal processing.

Conditions to Avoid
Incompatible products. Excess heat. Exposure to moist air or water.

Incompatible Materials
Strong oxidizing agents. Water.

Hazardous Decomposition Products
Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

Information on expected route of exposure

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Inhalation May be fatal if inhaled. Toxic by inhalation. Avoid breathing dust or spray mist.
Ingestion May be fatal if swallowed. May be harmful if swallowed.
Eyes Avoid contact with eyes.
Skin May be fatal if absorbed through skin. Avoid contact with skin. Harmful in contact with skin.

Information on Health Hazards

(a) acute toxicity;

Oral Category 2
Dermal Category 1
Inhalation Category 2

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Mercuric sulfate	7783-35-9	LD50 = 57 mg/kg (Rat)	LD50 = 625 mg/kg (Rat)	No data available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

Component	CAS No	Test method	Test species	Study result
Mercuric sulfate	7783-35-9	No data available	No data available	No data available

(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
Mercuric sulfate	7783-35-9	No data available	No data available	No data available

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Mercuric sulfate	7783-35-9	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Mercuric sulfate	7783-35-9	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Mercuric sulfate	7783-35-9	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 2

Target Organs Central nervous system (CNS), Eyes, Respiratory system, Kidney, Skin.

(j) aspiration hazard; Not applicable
Solid

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Other Adverse Effects

Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing. May cause adverse kidney effects. Symptoms may be delayed.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	Not applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Mercuric sulfate	7783-35-9	No data available	No data available	No data available	No data available

Persistence and degradability

Persistence
Degradability
Degradation in sewage treatment plant

Soluble in water, Persistence is unlikely, based on information available.
Not relevant for inorganic substances.
Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential

Bioaccumulation is unlikely

Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
Mercuric sulfate	7783-35-9	Not listed

Other adverse effects

No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Solutions with low pH-value must be neutralized before discharge. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN1645
Proper Shipping Name MERCURY SULPHATE
Hazard Class 6.1
Packing Group II

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IATA

UN-No UN1645
Proper Shipping Name MERCURY SULPHATE
Hazard Class 6.1
Packing Group II

IMDG/IMO

UN-No UN1645
Proper Shipping Name MERCURY SULPHATE
Hazard Class 6.1
Subsidiary Hazard Class P
Packing Group II
Marine Pollutant Dangerous for the environment
Product is a marine pollutant according to the criteria set by IMDG/IMO

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

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

Legend: X - Listed '-' - Not Listed

International Inventories

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Mercuric sulfate	7783-35-9	KE-23132	X	231-992-5	X	X	-	X	X	X	X

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	X	Annex I - Y29

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	Not applicable

Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Mercuric sulfate	7783-35-9	Annex 1 - KE-23132	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Mercuric sulfate	7783-35-9	1997-1-0140 (>1%)	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment	Ministry of Environment
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			CMR risk	Critically Controlled Substance
Mercuric sulfate	7783-35-9	>0.005 mg/L (WCL) > 1% (CCA)	Not applicable	Not applicable

CCA = Chemical Control Act
WCL = Waste Control Law

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Mercuric sulfate	7783-35-9	Not applicable	Listed	0.025 mg/m ³ TWA

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	Formulations containing 0.3% or more

National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Mercuric sulfate	7783-35-9	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
Mercuric sulfate	7783-35-9	Not listed	Not listed

US Management Information

OSHA - Occupational Safety and Health Administration
Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Mercuric sulfate	7783-35-9	Not applicable	Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355)

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Mercuric sulfate	7783-35-9	Not applicable	10 lb	> 0 %

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Danger.

H410 - Very toxic to aquatic life with long lasting effects. H373 - May cause damage to organs through prolonged or repeated

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exposure. H300 + H310 + H330 - Fatal if swallowed, in contact with skin or if inhaled.

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water. P330 - Rinse mouth. P310 - Immediately call a POISON CENTER or doctor/physician. P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P273 - Avoid release to the environment.

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Creation Date 13-May-2014

Revision Date 06-Jun-2024

Revision Number 5

Revision Summary SDS sections updated.

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information

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relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet