



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/23/2013

Version 1.4

SECTION 1. Identification

Product identifier

Product number	104419
Product name	Mercury(II) chloride for analysis EMSURE® Reag. Ph Eur, ACS

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

Identified uses	Reagent for analysis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America SDS Phone Support: +1-978-715-1335 General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Germ cell mutagenicity, Category 2, H341
Reproductive toxicity, Category 2, H361f
Acute toxicity, Category 2, Oral, H300
Specific target organ systemic toxicity - repeated exposure, Category 1, Kidney, H372
Skin corrosion, Category 1B, H314
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H300 Fatal if swallowed.

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H314 Causes severe skin burns and eye damage.

H341 Suspected of causing genetic defects.

H361f Suspected of damaging fertility.

H372 Causes damage to organs (Kidney) through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P273 Avoid release to the environment.

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

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

According to the criteria, the general hazard statement can be replaced by the hazard statement indicating only the property of concern, where either fertility or developmental effects are proven to be not relevant. See Annex VI, 1.2.3, General hazard statement not specifying the route of exposure as the necessary information is not available. See Annex VI, 1.2.2

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	HgCl ₂	Cl ₂ Hg (Hill)
CAS-No.	7487-94-7	
Molar mass	271.5 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

Mercury dichloride (>= 90 % - <= 100 %)

7487-94-7

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Immediately call in physician.

Skin contact

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

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Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath

Risk of blindness!

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

mercury vapors, Hydrogen chloride gas

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry. Protected from light. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage temperature: no restrictions.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Mercury dichloride 7487-94-7</i>			
ACGIH	Time Weighted Average (TWA): Skin designation:	0.025 mg/m ³	Expressed as: as Hg Can be absorbed through the skin. Expressed as: as Hg
NIOSH/GUIDE	Ceiling Limit Value and Time Period (if specified): Skin designation:	0.1 ppm	Expressed as: as Hg Can be absorbed through the skin. Expressed as: as Hg
Z1A	Ceiling Limit Value: Skin designation (Final Rule Limit applies):	0.1 mg/m ³	Expressed as: as Hg Can be absorbed through the skin. Expressed as: as Hg

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

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Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	white
Odor	odorless
Odor Threshold	No information available.
pH	3.2 at 15 g/l
Melting point	280.7 °C
Boiling point/boiling range	576 °F (302 °C) at 1,013 hPa (sublimed)
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable

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Vapor pressure	0.0001 hPa at 68 °F (20 °C)
	ca.0.1 hPa at 212 °F (100 °C)
Relative vapor density	No information available.
Relative density	5.44 g/cm³ at 68 °F (20 °C)
Water solubility	74 g/l at 68 °F (20 °C)
	550 g/l at 212 °F (100 °C)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Ignition temperature	not applicable
Bulk density	ca.2,000 kg/m³

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

Sensitivity to light

Possibility of hazardous reactions

Risk of explosion with:

Fluorine, Alkali metals, hydrazine and derivatives

Exothermic reaction with:

Strong bases, Strong oxidizing agents

Conditions to avoid

no information available

Incompatible materials

Lead, Copper, Light metals, silver, Zinc, Tin

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Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

Acute oral toxicity

LDLO human: 29 mg/kg (Lit.)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

LD50 rat: 1 mg/kg (RTECS)

absorption

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Corrosive to respiratory system

Acute dermal toxicity

LD50 rabbit: 41 mg/kg

(RTECS)

absorption

Skin irritation

rabbit

Result: Causes burns.

(RTECS)

Causes burns.

Eye irritation

rabbit

Result: Causes burns.

(RTECS)

Causes serious eye damage.

Risk of blindness!

Genotoxicity in vitro

Mutagenicity (mammal cell test): micronucleus.

Result: positive

(RTECS)

Ames test

Salmonella typhimurium

Result: positive

(RTECS)

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CMR effects

Mutagenicity:

Suspected of causing genetic defects.

Reproductive toxicity:

Suspected of damaging fertility.

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

Target Organs: Kidney

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After absorption:

Mercury compounds have a cytotoxic and protoplasmatoxic effect. Intoxication symptoms: acute: contact with eye causes severe lesions. Swallowing and inhalation of dusts damages mucous membranes of gastrointestinal and respiratory tract (metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal oedema, aspiration pneumonia); drop in blood pressure, cardiac dysrhythmia, circulatory collapse, and renal failure; chronic: inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing, and sensitivity, loss of memory, irritability, hallucinations, delirium inter alia).

Further data:

This substance should be handled with particular care.

SECTION 12. Ecological information

Ecotoxicity

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Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 0.003 mg/l; 48 h (HSDB)

Toxicity to bacteria

EC5 Pseudomonas putida: 0.01 mg/l; 16 h (Lit.)

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1624
Proper shipping name	MERCURIC CHLORIDE
Class	6.1
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1624
Proper shipping name	MERCURIC CHLORIDE
Class	6.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1624
Proper shipping name	MERCURIC CHLORIDE
Class	6.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-A

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SECTION 15. Regulatory information

United States of America

OSHA Hazards

Highly toxic by ingestion

Highly toxic by skin absorption

Corrosive to skin

Corrosive to eyes

Corrosive by inhalation.

Reproductive hazard

Mutagen

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Acute Health Hazard

Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

Mercury dichloride

7487-94-7

SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

Ingredients

Mercury dichloride

7487-94-7

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

Mercury dichloride

Pennsylvania Right To Know

Ingredients

Mercury dichloride

New Jersey Right To Know

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Ingredients

Mercury dichloride

California Prop 65 Components

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Ingredients

Mercury dichloride

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H300	Fatal if swallowed.
H314	Causes severe skin burns and eye damage.
H341	Suspected of causing genetic defects.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 08/23/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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