



MATERIAL SAFETY DATA SHEET

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

Revision Date 08/23/2013

Version 1.2

SECTION 1. Identification

Product identifier

| | |
|----------------|------------------------------------|
| Product number | 104420 |
| Product name | Mercury(II) iodide red, extra pure |

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

| | |
|-----------------|---|
| Identified uses | Reagent for analysis, Chemical production |
|-----------------|---|

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) |
|---------|---|

| | |
|---------------------|--|
| Emergency telephone | 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week |
|---------------------|--|

SECTION 2. Hazards identification

GHS Classification

Acute toxicity, Category 2, Oral, H300
Acute toxicity, Category 2, Inhalation, H330
Acute toxicity, Category 1, Dermal, H310
Specific target organ systemic toxicity - repeated exposure, Category 2, Kidney, H373
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 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled.

H373 May cause damage to organs (Kidney) through prolonged or repeated exposure.

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H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing.

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

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

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 | HgI ₂ (Hill) |
| CAS-No. | 7774-29-0 |
| Molar mass | 454.39 g/mol |

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

Mercury(II) iodide (>= 90 % - <= 100 %)

7774-29-0

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. If breathing stops: immediately apply artificial respiration, if necessary oxygen. Immediately call in physician.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing. Call a physician immediately.

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. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

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Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

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.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

mercury vapors, iodine, hydrogen iodide

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

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. 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.

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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

Dry. Protected from light. Tightly closed. 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(II) iodide 7774-29-0</i> | | | |
| ACGIH | Time Weighted Average (TWA): | 0.025 mg/m³ | Expressed as: as Hg |
| | Skin designation: | | Can be absorbed through the skin. Expressed as: as Hg |
| NIOSH/GUIDE | Time Weighted Average (TWA): | 0.01 ppm | Form of exposure: Inhalable fraction and vapor. |
| | Ceiling Limit Value and Time Period (if specified): | 0.1 ppm | Expressed as: as Hg |
| | Skin designation: | | Can be absorbed through the skin. Expressed as: as Hg |
| Z1A | Ceiling Limit Value: | 0.1 mg/m³ | Expressed as: as Hg |
| | Skin designation (Final Rule Limit applies): | | 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.

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. Work under hood. Do not inhale substance/mixture.

Eye/face protection

Safety glasses

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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 | red |
| Odor | odorless |
| Odor Threshold | No information available. |
| pH | 6 - 7 at 50 g/l 68 °F (20 °C) (slurry) |
| Melting point | 259 °C |
| Boiling point/boiling range | 669 °F (354 °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 |
| Vapor pressure | ca.0.006 hPa at 176 °F (80 °C) ca.0.001 hPa at 140 °F (60 °C) |
| Relative vapor density | No information available. |

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| | |
|--|--|
| Relative density | 6.36 g/cm ³ at 77 °F (25 °C) |
| Water solubility | 0.06 g/l at 77 °F (25 °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 | No information available. |
| Ignition temperature | not applicable |
| Bulk density | ca. 1,350 kg/m ³ |

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

Sensitivity to light

Possibility of hazardous reactions

Risk of explosion with:

Alkali metals

Risk of ignition or formation of inflammable gases or vapors with:
halogen-halogen compounds

Conditions to avoid

Avoid shock and friction.

Strong heating (decomposition).

Incompatible materials

no information available

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

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Acute oral toxicity

LD50 rat: 18 mg/kg (RTECS)

absorption

Acute inhalation toxicity

absorption

Acute toxicity estimate: 0.051 mg/l

Expert judgment

Acute dermal toxicity

LD50 rat: 75 mg/kg

(RTECS)

absorption

Sensitization

Sensitization possible in predisposed persons.

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

May cause 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

Other information

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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

Toxicity to fish

LC50 *Leuciscus idus* (Golden orfe): 0.13 mg/l; 96 h (Lit.)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 0.0052 mg/l; 48 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 1638 |
| Proper shipping name | MERCURY IODIDE |
| Class | 6.1 |
| Packing group | II |
| Environmentally hazardous | -- |

Air transport (IATA)

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UN number UN 1638
Proper shipping name MERCURY IODIDE
Class 6.1
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 1638
Proper shipping name MERCURY IODIDE
Class 6.1
Packing group II
Environmentally hazardous --
Special precautions for user yes
EmS F-A S-A

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Highly toxic by ingestion
Highly toxic by skin absorption
Highly toxic by inhalation

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

SARA 313

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

Ingredients

Mercury(II) iodide 7774-29-0

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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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

Remarks

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Ingredients

Mercury(II) iodide

New Jersey Right To Know

Ingredients

Mercury(II) iodide

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(II) iodide

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.

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

| | |
|------|--|
| H300 | Fatal if swallowed. |
| H310 | Fatal in contact with skin. |
| H330 | Fatal if inhaled. |
| H373 | May cause 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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