



SAFETY DATA SHEET

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

Revision Date 04/20/2015

Version 1.5

SECTION 1. Identification

Product identifier

Product number 109092
Product name Cerium(IV) sulfate solution $c(\text{Ce}(\text{SO}_4)_2 \cdot 4 \text{H}_2\text{O}) = 0.1 \text{ mol/l}$ (0.1 N)
Titripur® Reag. Ph Eur, Reag. USP

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,
United States of America | 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

Corrosive to Metals, Category 1, H290
Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319

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

GHS-Labeling

Hazard pictograms



Signal Word
Warning

Hazard Statements

H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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Precautionary Statements

P234 Keep only in original container.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ eye protection/ face protection.

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

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

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

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P390 Absorb spillage to prevent material damage.

P406 Store in corrosive resistant stainless steel container with a resistant inner liner.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature

Sulfuric acid solution.

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

sulphuric acid ($\geq 1\%$ - $< 5\%$)

7664-93-9

Exact percentages are being withheld as a trade secret.

Cerium(IV) sulphate ($\geq 1\%$ - $< 5\%$)

13590-82-4

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact

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

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Shortness of breath

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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.

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

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. Do not breathe vapors, aerosols. 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 with liquid-absorbent and neutralizing material (e.g. Chemizorb® H⁺, Art. No. 101595).

Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

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SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i> sulphuric acid 7664-93-9</i>			
ACGIH	Time Weighted Average (TWA):	0.2 mg/m ³	Form of exposure: Thoracic fraction.
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m ³	
OSHA_TRANS	PEL:	1 mg/m ³	
Z1A	Time Weighted Average (TWA):	1 mg/m ³	

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.

Eye/face protection

Safety glasses

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:

Acid-resistant protective clothing.

Respiratory protection

required when vapors/aerosols 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	liquid
Color	yellow
Odor	odorless

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Odor Threshold	No information available.
pH	0.4 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	1.06 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
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.
Oxidizing properties	No information available.
Corrosion	May be corrosive to metals.

SECTION 10. Stability and reactivity

Reactivity

has a corrosive effect

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Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:

Water, Alkali metals, alkali compounds, Ammonia, alkalines, Metals, Alkaline earth metals, alkaline earth compounds, metal alloys, acids

Conditions to avoid

no information available

Incompatible materials

Metals, animal/vegetable tissues

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Target Organs

Eyes

Skin

Respiratory system

teeth

Mucous membranes

Acute oral toxicity

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: Possible damages:, Irritation symptoms in the respiratory tract.

Skin irritation

Mixture causes skin irritation.

Eye irritation

Mixture causes serious eye irritation.

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

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

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

Group 1: Carcinogenic to humans

sulphuric acid

7664-93-9

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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	Known carcinogen.	
	sulphuric acid	7664-93-9
ACGIH	A2: Suspected human carcinogen	
	sulphuric acid	7664-93-9

Further information

Quantitative data on the toxicity of this product are not available.

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

sulphuric acid

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(HSDB)

Cerium(IV) sulphate

No information available.

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Additional ecological information

Biological effects:

Harmful effect due to pH shift. Caustic even in diluted form. Does not cause biological oxygen deficit. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Further information on ecology

Discharge into the environment must be avoided.

Ingredients

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sulphuric acid

Toxicity to daphnia and other aquatic invertebrates

static test EC50 Daphnia magna (Water flea): > 100 mg/l; 48 h

OECD Test Guideline 202

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Cerium(IV) sulphate

No information available.

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 3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. SULPHURIC ACID)
Class	8
Packing group	III
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. SULPHURIC ACID)
Class	8
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONT. SULPHURIC ACID)
Class	8
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes

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EmS

F-A S-B

SECTION 15. Regulatory information

United States of America

SARA 313

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

Ingredients

sulphuric acid	7664-93-9	4.9 %
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SARA 302

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

Ingredients

sulphuric acid	7664-93-9
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Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients

sulphuric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients

sulphuric acid

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

DEA List I

Not listed

DEA List II

Listed

Ingredients

sulphuric acid	7664-93-9
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US State Regulations

Massachusetts Right To Know

Ingredients

sulphuric acid

Pennsylvania Right To Know

Ingredients

sulphuric acid

New Jersey Right To Know

Ingredients

sulphuric acid

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California Prop 65 Components

WARNING: this product contains a chemical known in the State of California to cause cancer.

Ingredients

sulphuric acid

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.

Labeling

Hazard pictograms



Signal Word

Warning

Hazard Statements

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary Statements

Response

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

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

P313 Get medical advice/ attention.

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

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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.

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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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