



# MATERIAL SAFETY DATA SHEET

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

Revision Date 08/22/2013

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number	108917
Product name	Zirconium(IV) oxide chloride octahydrate for analysis EMSURE®

### 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

Skin corrosion, Category 1B, H314

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

### GHS-Labeling

*Hazard pictograms*



*Signal Word*

Danger

*Hazard Statements*

H314 Causes severe skin burns and eye damage.

*Precautionary Statements*

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.

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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.

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## SECTION 3. Composition/information on ingredients

Formula	ZrOCl <sub>2</sub> * 8 H <sub>2</sub> O	Cl <sub>2</sub> OZr * 8 H <sub>2</sub> O (Hill)
CAS-No.	13520-92-8	
Molar mass	322.28 g/mol	

## Hazardous ingredients

*Chemical Name ( Concentration)*

CAS-No.

*zirconium dichloride oxide octahydrate ( >= 90 % - <= 100 % )*  
13520-92-8

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## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air. 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.

#### *Eye contact*

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

#### *Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. 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

### Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

*Suitable extinguishing media*

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

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### *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:

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.

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## **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.

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

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

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## **SECTION 7. Handling and storage**

### **Precautions for safe handling**

Observe label precautions.

### **Conditions for safe storage, including any incompatibilities**

Tightly closed. Dry.

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)**

Contains no substances with occupational exposure limit values.

### **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.

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## SECTION 9. Physical and chemical properties

Physical state	solid
Color	white
Odor	weak
Odor Threshold	No information available.
pH	ca. 1 at 50 g/l 68 °F ( 20 °C)
Melting point	not applicable
Boiling point/boiling range	not applicable
Flash point	does not flash
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	low
Relative vapor density	No information available.
Relative density	1.91 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	at 68 °F ( 20 °C) soluble
Partition coefficient: n-octanol/water	not applicable
Autoignition temperature	No information available.
Decomposition temperature	> 302 °F ( > 150 °C) Elimination of water of crystallization
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Ignition temperature	not combustible
Bulk density	ca. 800 kg/m <sup>3</sup>

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## SECTION 10. Stability and reactivity

### Reactivity

See below

### Chemical stability

releases water of crystallization when heated.

### Possibility of hazardous reactions

Violent reactions possible with:

Strong acids

### Conditions to avoid

Strong heating.

### Incompatible materials

no information available

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Eye contact, Skin contact, Ingestion

#### *Acute oral toxicity*

LD50 rat: 3,500 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.

#### *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract

#### *Skin irritation*

Causes burns.

#### *Eye irritation*

Causes serious eye damage. Risk of blindness!

#### *Genotoxicity in vivo*

Mutagenicity (mammal cell test): chromosome aberration.

Result: positive

(Lit.)

#### *Genotoxicity in vitro*

Ames test

Result: negative

(Lit.)

#### *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	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

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carcinogen by ACGIH.

## Further information

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

#### *Toxicity to fish*

LC50 Pimephales promelas (fathead minnow): 20 - 500 mg/l; 48 h (IUCLID)

### Persistence and degradability

No information available.

### Bioaccumulative potential

#### *Partition coefficient: n-octanol/water*

not applicable

### Mobility in soil

No information available.

#### *Additional ecological information*

Biological effects:

Harmful effect due to pH shift.

Further information on ecology

Discharge into the environment must be avoided.

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## 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.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number

UN 3260

Proper shipping name

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZIRKONIUMOXIDCHLORIDE)

Class

8

Packing group

II

Environmentally hazardous

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### Air transport (IATA)

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**UN number** UN 3260  
**Proper shipping name** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZIRKONIUMOXIDCHLORIDE)  
**Class** 8  
**Packing group** II  
**Environmentally hazardous** --  
**Special precautions for user** no

### Sea transport (IMDG)

**UN number** UN 3260  
**Proper shipping name** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZIRKONIUMOXIDCHLORIDE)  
**Class** 8  
**Packing group** II  
**Environmentally hazardous** --  
**Special precautions for user** yes  
EmS F-A S-B

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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Corrosive to skin  
Corrosive to eyes  
Corrosive 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

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### 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*

zirconium dichloride oxide octahydrate

### New Jersey Right To Know

*Ingredients*

zirconium dichloride oxide octahydrate

### California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## 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.

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## 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.

H314 Causes severe skin burns and eye damage.

### 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](http://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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