



# MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/02/2012

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number	170390
Product name	Zirconium ICP standard traceable to SRM from NIST, ZrOCl <sub>2</sub> in HCl 7% 10000 mg/l Zr CertiPUR®

### 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: +1-978-751-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)  e-mail: mm_sds@merckgroup.com
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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

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

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H315 Causes skin irritation.  
H319 Causes serious eye irritation.

### *Precautionary Statements*

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.

### **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**

Chemical nature                      Aqueous solution

### **Hazardous ingredients**

*Chemical Name ( Concentration)*

CAS-No.

*hydrochloric acid ( >= 5 % - < 10 % )*

7647-01-0

*zirconium dichloride oxide ( >= 1 % - < 5 % )*

7699-43-6

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## **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. 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

### **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.

##### *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. 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. Chemisorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

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### SECTION 7. Handling and storage

#### Precautions for safe handling

Observe label precautions.

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

Requirements for storage areas and containers No metal containers. 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>hydrochloric acid 7647-01-0</i>			
ACGIH	Ceiling Limit Value:	2 ppm	
NIOSH/GUIDE	Ceiling Limit Value and Time Period (if specified):	5 ppm 7 mg/m <sup>3</sup>	
OSHA_TRANS	Ceiling Limit Value:	5 ppm 7 mg/m <sup>3</sup>	
Z1A	Ceiling Limit Value:	5 ppm 7 mg/m <sup>3</sup>	
<i>zirconium dichloride oxide 7699-43-6</i>			
ACGIH	Time Weighted Average (TWA):	5 mg/m <sup>3</sup>	Expressed as: as Zr
	Short Term Exposure Limit (STEL):	10 mg/m <sup>3</sup>	Expressed as: as Zr
NIOSH/GUIDE	Recommended exposure limit (REL):	5 mg/m <sup>3</sup>	Expressed as: as Zr
	Short Term Exposure Limit (STEL):	10 mg/m <sup>3</sup>	Expressed as: as Zr
OSHA_TRANS	PEL:	5 mg/m <sup>3</sup>	Expressed as: as Zr
Z1A	Time Weighted Average (TWA):	5 mg/m <sup>3</sup>	Expressed as: as Zr
	Short Term Exposure Limit (STEL):	10 mg/m <sup>3</sup>	Expressed as: as Zr

### 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.

Recommended:

full contact:

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Glove material: Nitrile rubber  
Glove thickness: 0.11 mm  
Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber  
Glove thickness: 0.11 mm  
Break through time: > 480 min

*Other protective equipment:*  
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.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	No information available.
pH	< 1 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.

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Relative density	ca. 1.065 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	No information available.
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Corrosion	May be corrosive to metals.

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

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

#### Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with:

Metals

(generation of hydrogen)

Violent reactions possible with:

The generally known reaction partners of water.

#### Conditions to avoid

no information available

#### Incompatible materials

Metals, metal alloys

#### 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

*Target Organs*

Eyes

Skin

Respiratory system

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Cornea

*Acute oral toxicity*

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

*Acute inhalation toxicity*

Symptoms: Cough, Shortness of breath, Possible damages:, mucosal irritations

*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	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**

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.

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**SECTION 12. Ecological information**

**Ecotoxicity**

No information available.

**Persistence and degradability**

No information available.

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## Bioaccumulative potential

No information available.

## Mobility in soil

No information available.

## Other adverse effects

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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 1789
Proper shipping name	HYDROCHLORIC ACID
Class	8
Packing group	II
Environmentally hazardous	--

#### Air transport (IATA)

UN number	UN 1789
Proper shipping name	HYDROCHLORIC ACID
Class	8
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

#### Sea transport (IMDG)



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**UN number** UN 1789  
**Proper shipping name** HYDROCHLORIC ACID  
**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**

Target organ effects  
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  
Chronic Health Hazard

**US State Regulations**

**Massachusetts Right To Know**

*Ingredients*  
hydrochloric acid  
zirconium dichloride oxide

**Pennsylvania Right To Know**

*Ingredients*  
water  
hydrochloric acid

**New Jersey Right To Know**

*Ingredients*  
water  
hydrochloric acid  
zirconium dichloride oxide

**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**

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TSCA: On TSCA Inventory

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

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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.**

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](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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