



SAFETY DATA SHEET

Issue Date 14-Nov-2019

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Version 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code SAC040
Product Name Zirconium Oxychloride Solution

UN/ID no 1760
Synonyms Zirconium Chloride Oxide Solution, Zirconium Chloride Hydroxide Solution, Zirconium Dichloride Dihydroxide Solution, Zirconyl Chloride Solution

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

Recommended Use Chemical intermediate

Uses advised against

1.3. Details of the supplier of the safety data sheet

Manufacturer
ATI, 1000 Six PPG Place, Pittsburgh, PA 15222 USA

1.4. Emergency telephone number

Emergency Telephone Chemtrec: +1-703-741-5970

Section 2: HAZARDS IDENTIFICATION

This material is classified per Regulation (EC) No 1272/2008.

2.1. Classification of the substance or mixture Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
May be corrosive to metals	Category 1

2.2. Label elements

Emergency Overview

Danger

Hazard statements

H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage



Appearance Liquid**Physical state** Liquid**Odour** Pungent, Slight chlorine**Precautionary Statements - Prevention**

Do not breathe gas/mist/vapours/spray

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

Precautionary Statements - Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician

IF ON SKIN (or hair): Rinse cautiously with water for several minutes. Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower

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

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

Wash contaminated clothing before reuse

Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store in corrosive resistant container

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC)

Not applicable

Other Information

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Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances****Synonyms**

Zirconium Chloride Oxide Solution, Zirconium Chloride Hydroxide Solution, Zirconium Dichloride Dihydroxide Solution, Zirconyl Chloride Solution.

Chemical Name	EC No	CAS No	Weight-%
Water	231-791-2	7732-18-5	62 - 75
Zirconium Dichloride Oxide	231-717-9	7699-43-6	25 - 35

Section 4: FIRST AID MEASURES**4.1. Description of first aid measures****Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a doctor or poison control centre immediately.

Skin Contact

Wash off immediately with plenty of water. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye contact

Flush with water for 15 minutes. See a physician.

Ingestion

Do NOT induce vomiting. Have patient drink large quantities of water if able. Call Physician immediately for further instructions.

4.2. Most important symptoms and effects, both acute and delayed**Symptoms**

May cause acute gastrointestinal effects if swallowed. Contact with skin may cause skin burns. May cause breathing difficulties if inhaled.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

Section 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

Non-combustible.

Unsuitable extinguishing media

Non-combustible

5.2. Special hazards arising from the substance or mixture

Non-combustible

Hazardous combustion products Hydrogen chloride gas may cause respiratory and/or eye irritation.

5.3. Advice for firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures****Personal precautions**

Use personal protective equipment as required.

For emergency responders

Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 154.

6.2. Environmental precautions

Collect spillage to prevent release to the environment.

6.3. Methods and material for containment and cleaning up**Methods for containment**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Wash the spill location thoroughly with water. Respiratory protection may be needed. Skin and eye protection should be used during cleanup.

6.4. Reference to other sections

See Section 12: ECOLOGICAL INFORMATION.

Section 7: HANDLING AND STORAGE**7.1. Precautions for safe handling****Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep in properly labelled containers. Keep in a dry, cool and well-ventilated place. Protect from direct sunlight. Keep in corrosion resistant containers. Containers may become pressurized. Handle and open container with care.

Incompatible materials

Alcohols, phenols, and amines. Rubber, coatings, and some plastics.

7.3. Specific end use(s)**Risk Management Methods (RMM)**

The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters**

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Water 7732-18-5	-	-	-	-	-
Zirconium Dichloride Oxide 7699-43-6	-	TWA: 5 mg/m ³	-	STEL: 10 mg/m ³ TWA: 5 mg/m ³	-
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Water 7732-18-5	-	-	-	-	-
Zirconium Dichloride Oxide 7699-43-6	-	STEL: 10 mg/m ³ TWA: 5 mg/m ³	-	TWA: 1 mg/m ³	TWA: 5 mg/m ³
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Water 7732-18-5	-	-	-	-	-
Zirconium Dichloride Oxide 7699-43-6	TWA: 5 mg/m ³	TWA: 5 mg/m ³	STEL: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 5 mg/m ³ STEL: 5 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³

Derived No Effect Level (DNEL) No DNELs are available for this product as a whole

Predicted No Effect Concentration (PNEC) No PNECs are available for this product as a whole.

8.2. Exposure controls

Engineering Controls Avoid generation of uncontrolled mist.

Personal protective equipment**Eye/face protection**

If a risk of eye injury or irritation is present, appropriate eye protection is recommended; for example, tight-fitting goggles, foam-lined safety glasses, face shield, or other protective equipment that shields the eyes.

Skin and body protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

When gases/mists/vapours are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Environmental exposure controls Section 6: ACCIDENTAL RELEASE MEASURES.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state	Liquid	Odour	Pungent, Slight chlorine
Appearance	Liquid	Odour threshold	-
Colour	clear		
Property	Values	Remarks • Method	
pH	<1		

Melting point / freezing point	- / -	
Boiling point / boiling range	-	
Flash point	-	
Evaporation rate	-	
Flammability (solid, gas)	-	Not flammable
Flammability Limit in Air		
Upper flammability limit:		-
Lower flammability limit		-
Vapour pressure	-	Not applicable
Vapour density	-	Not applicable
Specific Gravity	1.4	
Water solubility	-	Not applicable
Solubility(ies)	-	-
Partition coefficient	-	Not applicable
Autoignition temperature	-	Not applicable
Decomposition temperature	-	
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidising properties	Not applicable	

9.2. Other information

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	-

Section 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Not applicable .

10.2. Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3. Possibility of hazardous reactions**Hazardous polymerisation**

Hazardous polymerisation does not occur.

Possibility of Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Alcohols, phenols, and amines. Rubber, coatings, and some plastics.

10.6. Hazardous decomposition products

Thermal decomposition produces hydrogen chloride gas.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

Inhalation	Product not classified.
Eye contact	Causes severe eye damage.
Skin Contact	Causes severe skin burns.
Ingestion	Harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water	-	-	-
Zirconium Dichloride Oxide	3500 mg/kg bw	-	-

Information on toxicological effects

Symptoms May cause skin burns. May cause severe upper respiratory irritation if inhaled. May cause acute gastrointestinal effects if swallowed. May cause burning sensation or redness in the eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity	Harmful if swallowed.
Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/eye irritation	Causes severe eye damage.
Sensitisation	Product not classified.
Germ cell mutagenicity	Product not classified.
Carcinogenicity	Product not classified.
Reproductive toxicity	Product not classified.
STOT - single exposure	Product not classified.
STOT - repeated exposure	Product not classified.
Aspiration hazard	Product not classified.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

This product as shipped is not classified for aquatic toxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Water	-	-	-	-
Zirconium Dichloride Oxide	The 72 h EC50 of zirconium dichloride oxide to <i>Pseudokirchnerella subcapitata</i> was 80% v/v saturated solution.	The 96 h LC50 of zirconium dioxide to <i>Danio rerio</i> was greater than 100 mg/L.	The 3 h EC50 of anhydrous zirconium acetate for activated sludge was greater than 1000 mg/L.	The 48 h EC50 of zirconium dichloride oxide to <i>Daphnia magna</i> was greater than 100% v/v saturated solution.

12.2. Persistence and degradability

12.3. Bioaccumulative potential

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12.4. Mobility in soil**Mobility**

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12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

12.6. Other adverse effects

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN/ID no	1760
14.2 Proper shipping name	Corrosive liquid, n.o.s. (Zirconium Oxychloride)
14.3 Hazard Class	8
14.4 Packing Group	II
14.5 Marine pollutant	Not applicable
14.6 Special Provisions	B2, IB2, T11, TP2, TP27
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	Not applicable

RID

14.1 UN/ID no	1760
14.2 Proper shipping name	Corrosive liquid, n.o.s. (Zirconium Oxychloride)
14.3 Hazard Class	8
14.4 Packing Group	II
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	B2, IB2, T11, TP2, TP27

ADR

14.1 UN/ID no	1760
14.2 Proper shipping name	Corrosive liquid, n.o.s. (Zirconium Oxychloride)
14.3 Hazard Class	8
14.4 Packing Group	II
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	B2, IB2, T11, TP2, TP27

ICAO (air)

14.1 UN/ID no	1760
14.2 Proper shipping name	Corrosive liquid, n.o.s. (Zirconium Oxychloride)
14.3 Hazard Class	8
14.4 Packing Group	II

14.5 Environmental hazard Not applicable
 14.6 Special Provisions B2, IB2, T11, TP2, TP27

IATA

14.1 UN/ID no 1760
 14.2 Proper shipping name Corrosive liquid, n.o.s. (Zirconium Oxychloride)
 14.3 Hazard Class 8
 14.4 Packing Group II
 Description Not applicable
 14.5 Environmental hazard Not applicable
 14.6 Special Provisions B2, IB2, T11, TP2, TP27 154
ERG Code

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Name	French RG number	Title
Water 7732-18-5	-	-
Zirconium Dichloride Oxide 7699-43-6	-	-

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

International Inventories

DSL/NDSL Complies
 EINECS/ELINCS Complies
 ENCS Complies
 IECSC Complies
 KECL Complies
 PICCS Complies
 AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

No chemical safety assessment has been performed for this product.

Section 16: OTHER INFORMATION

Issue Date 14-Nov-2019

Revision Date 14-Nov-2019

Revision Note Updated to comply with GHS.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Note:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Additional information available from: Safety data sheets and labels available at ATImetals.com