



# SAFETY DATA SHEET

Issue Date 08-Jul-2015

Revision Date 12-Oct-2016

Version 3

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product Name** Zirconium Tetrachloride

### Other means of identification

**Product Code** SAC022

**UN/ID No.** 2503

**Synonyms** Zirconium Tetrachloride; Zirconium Chloride (Product #305)

### Recommended use of the chemical and restrictions on use

**Recommended Use** Zirconium Compounds.

**Uses advised against**

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

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

#### **Emergency telephone number**

**Emergency Telephone** Chemtrec: 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 1B
Corrosive to metals	Category 1

### Label elements

#### Emergency Overview

**Danger**

#### **Hazard statements**

May be corrosive to metals

Causes severe skin burns and eye damage



**Appearance** Powder

**Physical state** Powder

**Odor** Pungent, Slight chlorine.

#### **Precautionary Statements - Prevention**

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

Do not breathe dust/gas/mist

**Precautionary Statements - Response**

IF SWALLOWED: Rinse mouth, Do NOT induce vomiting

IF ON SKIN (or hair), Brush off loose particles from skin, 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

Immediately call a POISON CENTER or doctor/physician

Wash contaminated clothing before reuse

Absorb spillage to prevent material damage

**Precautionary Statements - Storage**

Store in a dry place

Store in corrosion-resistant container

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Synonyms**

Zirconium Tetrachloride: Zirconium Chloride, (Product #305).

Chemical Name	CAS No.	Weight-%
Zirconium Tetrachloride	10026-11-6	>97

**4. FIRST AID MEASURES****First aid measures****Eye contact**

Flush with water for 15 minutes. See a physician.

**Skin Contact**

Brush off loose particles from skin. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**Inhalation**

If fumes from reactions are inhaled, move to fresh air immediately. Call a physician or poison control center immediately.

**Ingestion**

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

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

None anticipated.

**Indication of any immediate medical attention and special treatment needed****Note to physicians**

Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****Suitable extinguishing media**

Non-combustible.

**Unsuitable extinguishing media** If a fire occurs in the area, avoid water contact with the product to prevent evolution of hazardous gases.

**Specific hazards arising from the chemical**

Non-combustible.

**Hazardous combustion products** Not applicable.**Explosion data****Sensitivity to Mechanical Impact** None.**Sensitivity to Static Discharge** None.**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) respirator and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES****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. 137.**Environmental precautions****Environmental precautions** See section 12 for additional ecological information.**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** Sweep or shovel material into dry containers. Avoid creating uncontrolled dust. Wash the spill location thoroughly with water. Respiratory and skin protection may be needed during cleanup.**7. HANDLING AND STORAGE****Precautions for safe handling****Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Protect from moisture. Reacts with water. Ensure adequate ventilation, especially in confined areas. Handle under inert gas such as nitrogen or argon to maintain the integrity of the product.**Conditions for safe storage, including any incompatibilities****Storage Conditions** Keep in properly labeled containers. Keep in a dry, cool and well-ventilated place. Protect from direct sunlight. Containers may become pressurized: Handle and open container with care.**Incompatible materials** Water, alcohols, phenols, and amines. Rubber, coatings, and some plastics.**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

Chemical Name	ACGIH TLV	OSHA PEL
Zirconium Tetrachloride 10026-11-6	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr	TWA: 5 mg/m <sup>3</sup> Zr (vacated) STEL: 10 mg/m <sup>3</sup> Zr

**Appropriate engineering controls****Engineering Controls** Avoid generation of uncontrolled particles.

**Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	If a risk of eye injury or irritation is present, appropriate eye protection is recommended; for example, tight-fitting goggles, foam-lined safety glasses, or other protective equipment that shields the eyes.
<b>Skin and body protection</b>	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
<b>Respiratory protection</b>	When particulates/fumes/gases 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.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

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

<b>Physical state</b>	Powder	<b>Odor</b>	Pungent, Slight chlorine.
<b>Appearance</b>	Powder	<b>Odor threshold</b>	
<b>Color</b>	white, orange		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
pH	<1		
Melting point/freezing point	440 °C / 820 °F		
Boiling point / boiling range	-		
Flash point	-	Not applicable	
Evaporation rate	-	Not applicable	
Flammability (solid, gas)	-	Not flammable	
Flammability Limit in Air			
Upper flammability limit:	-		
Lower flammability limit:	-		
Vapor pressure	-	Not applicable	
Vapor density	-	Not applicable	
Specific Gravity	2.8		
Water solubility	Reacts with water	hydrolyzes	
Solubility in other solvents	-		
Partition coefficient	-		
Autoignition temperature	-	Not applicable	
Decomposition temperature	-	Not applicable	
Kinematic viscosity	-	Not applicable	
Dynamic viscosity	-	Not applicable	
Explosive properties	Not applicable		
Oxidizing properties	Not applicable		

**Other Information**

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	45-80 lb/ft <sup>3</sup>

**10. STABILITY AND REACTIVITY****Reactivity**

Reacts with water

**Chemical stability**  
Stable under normal conditions.

Reacts with water.

Hazardous polymerization does not occur.

Unintentional contact with water.

Incompatible materials: Water, alcohols, phenols, and amines. Rubber, coatings, and some plastics.

**Hazardous Decomposition Products**  
 Reacts with water to produce hydrogen chloride gas or hydrochloric acid and heat.

### Information on likely routes of exposure

Product not classified.

Causes severe eye damage.

Causes severe skin burns.

Product not classified.

### Information on toxicological effects

None known.

Product not classified.

May cause severe skin burns.

May cause serious eye damage.

Product not classified.

Product not classified.

Product not classified.

Product not classified.

Product not classified.

Product not classified.

Product not classified.

## Ecotoxicity

This product as shipped is not classified for aquatic toxicity.

North America; English

			microorganisms	
Zirconium Tetrachloride 10026-11-6	The 14 d NOEC of zirconium tetrachloride to <i>Chlorella vulgaris</i> was greater than 262 mg of ZrCl <sub>4</sub> /L.	The 96h LC50 value of zirconium tetrachloride to <i>Oncorhynchus mykiss</i> was greater than 51 mg ZrCl <sub>4</sub> /L and the 96 h LL50 of zirconium tetrachloride to <i>Danio rerio</i> was greater than 190 mg of ZrCl <sub>4</sub> /L.	-	The 48 h EC50 of zirconium tetrachloride to <i>Daphnia magna</i> was greater than 190 mg of ZrCl <sub>4</sub> /L.

**Persistence and degradability**

.

**Bioaccumulation****Other adverse effects****13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Disposal of wastes**

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.

**14. TRANSPORT INFORMATION****DOT**

UN/ID No.	Regulated 2503
Proper shipping name	Zirconium Tetrachloride
Hazard Class	8
Packing Group	III
Special Provisions	IB8, IP3, T1, TP33
Emergency Response Guide Number	137

**15. REGULATORY INFORMATION****International Inventories**

TSCA	Complies
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

### US Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

#### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zirconium Tetrachloride 10026-11-6	5000 lb			X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs
Zirconium Tetrachloride 10026-11-6	5000 lb

### US State Regulations

#### California Proposition 65

This product does not contain any Proposition 65 chemicals

#### U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Zirconium Tetrachloride 10026-11-6	X	X	X

#### U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

### 16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 1	Flammability 0	Instability 1	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 2*	Flammability 0	Physical hazards 2	Personal protection X
<i>Chronic Hazard Star Legend</i> * = Chronic Health Hazard				

Issue Date 08-Jul-2015  
 Revision Date 12-Oct-2016

Revision Note  
 SDS sections updated 14

#### Note:

The information provided in this 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](http://ATImetals.com)