



# SAFETY DATA SHEET

Issue Date 28-May-2015

Revision Date 13-Jan-2025

Version 7

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

**A Product Name** Zirconium Sponge (distilled)

**Synonyms** All quality grades of zirconium sponge (distilled), Kroll Process Zirconium Metal (Product #302), including but not limited to item numbers: 1000087, 1000087NR, 1000344, 1017035, 1017059, 1017215, 1017218

**Product Code** SAC002

**UN/ID No.** 3089

**B Recommended Use** Alloy product manufacture

**Uses advised against**

**C Supplier**

**Company Name**

ATI Specialty Alloys & Components, 1600 Old Salem Rd NE, Albany, OR 97321 USA ATI SDS Manager: +1-412-225-4911

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

## Section 2: HAZARDS IDENTIFICATION

**A GHS - Classification**

Flammable solids	Category 2
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**B Label elements**

**Emergency Overview**

<b>Signal word</b>	Danger
<b>Hazard statements</b>	H228 - Flammable solid



<b>Appearance</b> Sponge	<b>Physical state</b> Solid	<b>Odor</b> Odorless
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**Precautionary Statements - Prevention**

- Wear protective gloves/protective clothing/eye protection
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- Ground/bond container and receiving equipment
- If dust clouds can occur, use explosion-proof electrical/ ventilating/lighting/equipment

**Precautionary Statements - Response**

- In case of fire: Use salt (NaCl) or class D dry powder for extinction

**C Other Information****Hazards not otherwise classified (HNOC)**

- Not applicable

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms** All quality grades of zirconium sponge (distilled), Kroll Process Zirconium Metal (Product #302), including but not limited to item numbers: 1000087, 1000087NR, 1000344, 1017035, 1017059, 1017215, 1017218

Chemical Name	CAS No.	Weight-%
Zirconium	7440-67-7	>99

### Section 4: FIRST AID MEASURES

- A Eye contact** In the case of particles coming in contact with eyes during processing, treat as with any foreign object
- B Skin Contact** None under normal use conditions
- C Inhalation** If excessive amounts of smoke, fume, or particulate are inhaled during processing, remove to fresh air and consult a qualified health professional
- D Ingestion** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- E Symptoms** None anticipated.
- F. Indication of immediate medical attention and special treatment needed, if necessary** Treat symptomatically.

### Section 5: FIRE FIGHTING MEASURES

- A Suitable extinguishing media** Isolate large fires and allow to burn out. Smother small fires with salt (NaCl) or class D dry powder fire extinguisher
- Unsuitable extinguishing media** Do not spray water on burning metal as an explosion may occur. This explosive characteristic is caused by the hydrogen and steam generated by the reaction of water with the burning material
- B Specific hazards arising from the chemical** Intense heat. Very fine, high surface area material resulting from processing this product may ignite spontaneously at room temperature **WARNING:** Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimize combustible dust hazard
- Hazardous combustion products** Not applicable.
- C Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

### Section 6: ACCIDENTAL RELEASE MEASURES

- A Personal precautions** Use personal protective equipment as required.
- For emergency responders** Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 170.

**B Environmental precautions** Collect spillage to prevent release to the environment

**C. 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 using non-sparking tools. Avoid creating uncontrolled dust.

## Section 7: HANDLING AND STORAGE

**A Advice on safe handling** Very fine, high surface area material resulting from processing this product may ignite spontaneously at room temperature **WARNING:** Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimize combustible dust hazard

**B Storage Conditions** Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity) For long-term storage, keep sealed in argon-filled steel drums

**Incompatible materials** Dissolves in hydrofluoric acid. Ignites in the presence of fluorine. When heated above 200°C, reacts exothermically with the following: chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, and freon.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**A Control parameters** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Chemical Name	Korea
Zirconium	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>

**B Engineering Controls** Avoid generation of uncontrolled particles

**C Personal Protective Equipment**  
**Respiratory protection**

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.

**Eye/face protection**

When airborne particles may be present, appropriate eye protection is recommended. For example, tight-fitting goggles, foam-lined safety glasses or other protective equipment that shield the eyes from particles.

**Skin and body protection**

Fire/flame resistant/retardant clothing may be appropriate during hot work with the product. Cut-resistant gloves and/or protective clothing may be appropriate when sharp surfaces are present.

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

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<b>A Physical state</b>	Solid	<b>Color</b>	Metallic gray or silver
<b>Appearance</b>	Sponge		
<b>B Odor</b>	Odorless		
<b>C Odor threshold</b>	Not applicable		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>D pH</b>	-	Not applicable
<b>E Melting point / freezing point</b>	1850 °C / 3360 °F	
<b>F Boiling point / boiling range</b>	-	

<b>G Flash point</b>	-	
<b>H Evaporation rate</b>	-	Not applicable
<b>I Flammability (solid, gas)</b>	-	Flammable
<b>J Flammability Limit in Air</b>		
Upper flammability limit:	-	
Lower flammability limit:	-	
<b>K Vapor pressure</b>	-	Not applicable
<b>L Solubility(ies)</b>		
Water solubility	Insoluble	
Solubility in other solvents		-
<b>M Vapor density</b>	-	Not applicable
<b>N Specific Gravity</b>	6.49	
<b>O. Partition coefficient</b>	-	Not applicable
<b>P. Autoignition temperature</b>	-	Not applicable
<b>Q. Decomposition temperature</b>	-	Not applicable
<b>R Kinematic viscosity</b>	-	Not applicable
Dynamic viscosity	-	Not applicable
<b>S. Molecular weight</b>	-	
<b>Other Information</b>		
Explosive properties	Not applicable	
Oxidizing properties	Not applicable	
Softening point	-	
VOC Content (%)	Not applicable	
Density	-	
Bulk density	-	

## Section 10: STABILITY AND REACTIVITY

<b>A Stability</b>	Stable under normal conditions
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	May be ignited by heat, sparks or flames.
<b>B Possibility of Hazardous Reactions</b>	None under normal processing
Hazardous polymerization	Hazardous polymerization does not occur
<b>C Conditions to avoid</b>	Dust formation and dust accumulation
<b>D Incompatible materials</b>	Dissolves in hydrofluoric acid. Ignites in the presence of fluorine. When heated above 200°C, reacts exothermically with the following: chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, and freon.
<b>E Hazardous Decomposition Products</b>	Not applicable

## Section 11: TOXICOLOGICAL INFORMATION

<b>A Information on likely routes of exposure</b>	
Inhalation	Product not classified.
Ingestion	Product not classified.
Eye contact	Product not classified.
Skin Contact	Product not classified.
<b>B Delayed and immediate effects as well as chronic effects from short and long-term exposure</b>	
Skin corrosion/irritation	Product not classified.
Serious eye damage/eye irritation	Product not classified.
Sensitization	Product not classified
Carcinogenicity	Product not classified

Germ cell mutagenicity	Product not classified
Reproductive toxicity	Product not classified
STOT - single exposure	Product not classified.
STOT - repeated exposure	Product not classified.
Target Organ Effects	
Aspiration hazard	Product not classified

**C Numerical measures of toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Zirconium	> 5000 mg/kg bw	-	>4.3 mg/L

**Information on toxicological effects**

Symptoms None known.

**Section 12: ECOLOGICAL INFORMATION****A Ecotoxicity**

This product as shipped is not classified for aquatic toxicity.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Zirconium	<i>The 14 d NOEC of zirconium dichloride oxide to Chlorella vulgaris was greater than 102.5 mg of Zr/L.</i>	<i>The 96 h LL50 of zirconium to Danio rerio was greater than 74.03 mg/L.</i>		<i>The 48 h EC50 of zirconium dioxide to Daphnia magna was greater than 74.03 mg of Zr/L.</i>

**B Persistence and degradability****C Bioaccumulation****D Mobility****E Other adverse effects****Section 13: DISPOSAL CONSIDERATIONS**

<b>A Waste from residues/unused products</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations
<b>B Contaminated packaging</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations

**Section 14: TRANSPORT INFORMATION**

<b>A UN/ID No.</b>	3089
<b>B Proper shipping name</b>	Metal powder, flammable, n.o.s. (Zirconium Sponge)
<b>C Hazard Class</b>	4.1
<b>D Packing Group</b>	III
<b>E Marine pollutant</b>	Not regulated <b>Special Provisions</b> IB6, T1, TP33

**Section 15: REGULATORY INFORMATION**

**A Industrial Safety and Health Law** Not applicable

Chemical Name	ISHA - Harmful	Korea. Harmful	ISHA - Substances to	ISHA - Substances to	ISHA - Substances to

	Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	Substances Requiring Permission	be controlled - Organic Substances	be controlled - Metals	be controlled - Acids and bases
Zirconium	Not applicable	Not applicable	Not applicable	X	Not applicable

**B Toxic Chemicals Control Law** Not applicable

Chemical Name	Toxic Chemical Classification Listing (TCCL) - Toxic Chemicals	Toxic Chemicals Control Law - Banned and/or restricted	Toxic Chemicals Control Law - Restrictions on use
Zirconium	Not applicable	Not applicable	Not applicable

**C Dangerous Material Safety Control** Not applicable**D Wastes Management** Dispose of in accordance with federal, state and local regulations**E Other Regulations**

Chemical Name	Toxic Release Inventory Chemicals - Group 1	Toxic Release Inventory Chemicals - Group 2
Zirconium	Not applicable	Not applicable

**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

**Section 16: OTHER INFORMATION****A Prepared By****B Issue Date** 28-May-2015**C Revision Date** 13-Jan-2025**Version** 7**Revision Note** SDS sections updated: 1, 7**D Other Information****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 [ATImaterials.com](http://ATImaterials.com)