



SAFETY DATA SHEET

Issue Date 28-May-2015

Revision Date 21-Jan-2026

Version 8

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
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Section 2: HAZARDS IDENTIFICATION

A GHS - Classification

Flammable solids	Category 1
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B Label elements

Emergency Overview

Signal word	Danger
Hazard statements	H228 - Flammable solid



Appearance	Sponge	Physical state	Solid	Odor	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.

attention and special treatment

needed, if necessary

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 ³ TWA: 5 mg/m ³

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

A Physical state

Solid

Appearance

Sponge

Color

Metallic gray or silver

B Odor

Odorless

C Odor threshold

Not applicable

Property

Values

Remarks • Method

D pH

-

Not applicable

E Melting point / freezing point

1850 °C / 3360 °F

F Boiling point / boiling range

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G Flash point	-	
H Evaporation rate	-	Not applicable
I Flammability (solid, gas)	-	Flammable
J Flammability Limit in Air		
Upper flammability limit:	-	
Lower flammability limit:	-	
K Vapor pressure	-	Not applicable
L Solubility(ies)		
Water solubility	Insoluble	
Solubility in other solvents		-
M Vapor density	-	Not applicable
N Specific Gravity	6.49	
O. Partition coefficient	-	Not applicable
P. Autoignition temperature	-	Not applicable
Q. Decomposition temperature	-	Not applicable
R Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
S. Molecular weight	-	

Other Information

Explosive properties	Not applicable
Oxidizing properties	Not applicable
Softening point	-
VOC Content (%)	Not applicable
Density	-
Bulk density	-

Section 10: STABILITY AND REACTIVITY**A Stability**

Stable under normal conditions

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	May be ignited by heat, sparks or flames.

B Possibility of Hazardous Reactions**Hazardous polymerization**

None under normal processing

Hazardous polymerization does not occur

C Conditions to avoid

Dust formation and dust accumulation

D 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.

E Hazardous Decomposition Products

Not applicable

Section 11: TOXICOLOGICAL INFORMATION**A Information on likely routes of exposure**

Inhalation	Product not classified.
Ingestion	Product not classified.
Eye contact	Product not classified.
Skin Contact	Product not classified.

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

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.
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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

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

B Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations

Section 14: TRANSPORT INFORMATION

A UN/ID No.	3089
B Proper shipping name	Metal powder, flammable, n.o.s. (Zirconium Sponge)
C Hazard Class	4.1
D Packing Group	II
E Marine pollutant	Not regulated Special Provisions IB8, IP2, IP4, T3, 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
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	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** 21-Jan-2026

Version

4

Revision Note SDS sections updated: 2, 14

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