



SAFETY DATA SHEET

Issue Date 25-Jan-2017

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Version 2

Section 1: PRODUCT AND COMPANY IDENTIFICATION

A Product Name Zirconium Oxynitrate

Synonyms Zirconium Oxynitrate; Zirconium Dinitrate Oxide, Zirconium Dinitrate Dihydroxide, Zirconium Nitrate Hydroxide, Zirconyl Nitrate (Product #316)

Product Code SAC037

UNID No. 3085

CAS No. 13826-66-9

B Recommended Use Zirconium Compounds

Uses advised against

C Supplier

Company Name

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

Manufacturer

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

Emergency Telephone Chemtrec +1 703-741-5970


Section 2: HAZARDS IDENTIFICATION

A GHS - Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Oxidizing solids	Category 2

B Label elements

Emergency Overview

Signal word Danger		
Hazard statements H272 - May intensify fire; oxidizer H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage H302 - Harmful if swallowed		
		
Appearance Powder	Physical state Solid	Odor Pungent, Slight nitric

Precautionary Statements - Prevention

- Wear protective gloves/protective clothing/eye protection
 - Do not breathe dust/gas/mist
 - Do not eat, drink or smoke when using this product
 - Wash hands thoroughly after handling
 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 - Store away from flammable substances, reducing agents, metal powders, and organic materials.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- IF ON SKIN (or hair): • Brush off loose particles from skin. Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
- Wash contaminated clothing before reuse
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. • Immediately call a POISON CENTER or doctor/physician
- In case of fire: Use Water spray, fog or regular foam for extinction

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

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

- Not applicable

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

Zirconium Oxynitrate: Zirconium Dinitrate Oxide, Zirconium Dinitrate Dihydroxide, Zirconium Nitrate Hydroxide, Zirconyl Nitrate (Product #316).

Chemical Name	CAS No.	Weight-%
Zirconium Dinitrate Oxide	13826-66-9	>99

Section 4: FIRST AID MEASURES

- A Eye contact** Flush with water for 15 minutes. See a physician
- B Skin Contact** Brush off loose particles from skin Remove/Take off immediately all contaminated clothing Rinse skin with water/shower
- C Inhalation** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a physician or poison control center immediately.
- D Ingestion** Do NOT induce vomiting Have patient drink large quantities of water if able. Call Physician immediately for further instructions.
- E Symptoms** May cause acute gastrointestinal effects if swallowed. Contact with moist skin may cause skin burns. May cause breathing difficulties if inhaled.
- F. Indication of immediate medical attention and special treatment needed, if necessary** Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

A Suitable extinguishing media	Material is a strong oxidizer but is itself not flammable. Water spray or fog is preferred; if water not available use dry chemical, CO ₂ or regular foam
Unsuitable extinguishing media	None
B Specific hazards arising from the chemical	This is a strong oxidizer and will react vigorously or explosively with many materials including organic materials, such as wood and paper, and flammable metals.
Hazardous combustion products	Nitrogen oxide gases may cause respiratory and/or eye irritation.
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. 140.
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. Avoid creating uncontrolled dust. Wash the spill location thoroughly with water. Respiratory protection may be needed. Skin and eye protection should be used during cleanup.

Section 7: HANDLING AND STORAGE

A 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
B Storage Conditions	Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity) Store away from flammable substances, reducing agents, metal powders, and organic materials. 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 Flammable substances, reducing agents, metal powders, and organic materials. Reacts with metals to produce heat and corrosive gases.

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
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Chemical Name	Korea
Zirconium Dinitrate Oxide	STEL: 10 mg/m ³ TWA: 5 mg/m ³

B Engineering Controls	Avoid generation of uncontrolled particles. Local exhaust ventilation during processing is recommended.
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	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
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	Color	white
Appearance	Powder		
B Odor	Pungent, Slight nitric		
C Odor threshold	-		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
D pH	<1	
E Melting point/freezing point	-	
F Boiling point / boiling range	-	
G Flash point	-	Not applicable
H Evaporation rate	-	Not applicable
I Flammability (solid, gas)	-	Not flammable
J Flammability Limit in Air		
Upper flammability limit:	-	
Lower flammability limit:	-	
K Vapor pressure	-	Not applicable
L Solubility(ies)		
Water solubility	Soluble in water	
Solubility in other solvents		
M Vapor density	-	Not applicable
N Specific Gravity	1.7	
O. Partition coefficient	-	
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	Strong oxidizer and will react vigorously or explosively with many materials including organic materials, such as wood and paper, and flammable metals.
Softening point	-
VOC Content (%)	Not applicable
Density	-
Bulk density	48 lb/ft ³

Section 10: STABILITY AND REACTIVITY

A Stability	Stable under normal conditions
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
B Possibility of Hazardous Reactions	Reacts with water
Hazardous polymerization	Hazardous polymerization does not occur

C Conditions to avoid	Unintentional contact with water. Heat. Electrostatic discharge.
D Incompatible materials	Water, alcohols, phenols, and amines. Rubber, coatings, and some plastics Flammable substances, reducing agents, metal powders, and organic materials. Reacts with metals to produce heat and corrosive gases.
E Hazardous Decomposition Products	Reacts with water to produce nitric acid and heat

Section 11: TOXICOLOGICAL INFORMATION

A Information on likely routes of exposure

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

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

Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/eye irritation	Causes severe eye damage.
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 Dinitrate Oxide	> 300 and < 2000 mg/kg bw	-	-

Information on toxicological effects

Symptoms	May cause skin burns. May cause burning sensation or redness in the eyes. May cause acute gastrointestinal effects if swallowed. May cause severe upper respiratory irritation if inhaled.
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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 Dinitrate Oxide	<i>The 72 h EC50 of zirconium dichloride oxide to Pseudokirchnerella subcapitata was 80% v/v saturated solution.</i>	<i>The 96 h LL50 of zirconium dinitrate oxide to Oncorhynchus mykiss was greater than 100 mg/L.</i>		<i>The 48 h EC50 of zirconium dioxide to Daphnia magna was greater than 100 mg/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.** 3085
- B Proper shipping name** Oxidizing Solid, Corrosive, n.o.s. (Zirconium Oxynitrate)
- C Hazard Class** 5.1
- Subsidiary hazard class** 8
- D Packing Group** II
- E Marine pollutant** Not regulated **Special Provisions** 62, IB8, IP3, T1, TP33

Section 15: REGULATORY INFORMATION

- A Industrial Safety and Health Law** Not applicable

Chemical Name	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	Korea. Harmful Substances Requiring Permission	ISHA - Substances to be controlled - Organic Substances	ISHA - Substances to be controlled - Metals	ISHA - Substances to be controlled - Acids and bases
Zirconium Dinitrate Oxide	Not applicable	Not applicable	Not applicable	Not applicable	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 Dinitrate Oxide	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 Dinitrate Oxide	Not applicable	Not applicable

International Inventories

DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Not Listed
AICS	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - 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	No information available
B Issue Date	25-Jan-2017
C Revision Date	20-Mar-2018
Version	2
Revision Note	Updated Section(s): 1, 2, 5, 6, 7, 8, 9, 11, 16

D Other Information

Note:

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End of Safety Data Sheet

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