ArgenZ HT+ ArgenZ HT+ Multilayer

This SDS conforms to Regulation (EU) No 1907/2006 and 20516/830, US Hazcom 2012 (29 CFR 1910.1200) and Canadian WHMIS 2015

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product identifier:
Product Name: ArgenZ HT+, ArgenZ HT+ Multilayer

1.2. Relevant Identified Uses of the Substance or Mixture and Uses Advised Against Product Use: Ceramic Blocks for Crowns and Bridges

1.3. Details of the Supplier of the Safety Data Sheet
Manufacturer: The Argen Corporation
5855 Oberlin Drive
San Diego, CA 92121
U.S.A.

1.4. Emergency telephone number CHEMTREC: 1-703-741-6090 (Collect calls accepted)

For information contact Regulatory Affairs; info@argen.com SDS Date of Preparation/Revision: May 2017/ Rev. A

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

OSHA Hazcom 2012 /WHMIS 2015 Classification: : CLP/GHS Classification (1272/2008) Not Hazardous Not Hazardous 2.2. Label elements None Required 2.3. Other hazards None Identified

SECTION 3: Composition/Information On Ingredients

3.1. Mixture

Component	CAS No.	EC No.	MITI	Amount	GHS Classification
Zirconia (Zirconium Oxide)	1314-23-4	215-227-7	1-563	>99%	Not hazardous
Yttria (Yttrium Oxide)	1314-36-9	215-233-5	1-560	6.1-8.2%	Not hazardous
Hafnium Oxide	12055-23-1	235-013-2	1-737	< 5%	Not hazardous
Aluminum Oxide	1344-28-1	215-691-6	1-23	< 0.2%	Not hazardous

SECTION 4: First Aid Measures

4.1. Description of First Aid Measures

INHALATION: Remove to fresh air. If irritation or difficulty in breathing occurs, get medical attention. SKIN CONTACT: No first aid is required. Wash skin with soap and water. If irritation develops, get medical **EYE CONTACT:** Flush eyes with large quantities of water, holding the eyelids apart.lf irritation persists consult No adverse effects expected. If large amounts are swallowed or if irritation or discomfor occurs, get medical attention. INGESTION:

4.2. Most Important symptoms and effects, both acute and delayed:
May cause mechanical eye irritation. Prolonged skin contact may cause mechanical irritation.
Inhalation of dust may cause upper respiratory tract irritation.

4.3. Indication of any immediate medical attention and special treatment needed: Immediate medical attention is not required.

SECTION 5: Firefighting Measures

- 5.1 Extinguishing Media: Use media appropriate for the surrounding fire.
- 5.2 Special Hazards arising from the Substance or Mixture: None known.
- 5.3 Advice for Firefighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored. Cool fire exposed containers with water.

SECTION 6: Accidental Release Measures

- **6.1 Personal Precautions, Protective Equipment and Emergency Procedures:** Wear appropriate protective clothing and equipment. Avoid contact with eyes. Avoid breathing dust.
- 6.2 Environmental Precautions: Report releases as required by local and national authorities.
- **6.3 Methods and Material for Containment and Cleaning Up:** Sweep up avoiding creating airborne dust and place into an appropriate container for disposal. Wash spill area with a damp cloth to remove residue.
- 6.4 Reference to Other Sections: Refer to Section 8 for personal protective equipment and Section 13 for disposal

SECTION 7: Handling and Storage

- 7.1 Precautions for Safe Handling: Avoid contact with eyes. Wash thoroughly after handling. Keep containers closed when not in use. Do not reuse containers.
- **7.2 Conditions for Safe Storage, Including any Incompatibilities:** Store as directed on package insert.
- 7.3 Specific end use(s):

Industrial uses: None identified

Professional uses: Ceramic Material for Dental Prosthetics

SECTION 8: Exposure Controls/Personal Protection

8.1. Control Parameters:

Chemical	Exposure Limit		
	5 mg/m³ TWA	OSHA PEL	
Zirconium Oxide (as zirconium compounds)	5 mg/m³ TWA, 10 mg/m³ STEL	ACGIH TLV	
	5 mg/m³ TWA	Canada Ontario	
	5 mg/m³ TWA	Canada Québec	
	1 mg/m³ TWA, 1 mg/m³ STEL (inhalable fraction)	Germany OEL	
	5 mg/m³ TWA, 10 mg/m³ STEL	UK OEL	
	2 mg/m³ TWA (respirable dust), 8 mg/m³ TWA (total dust)	Japan OEL	
	1 / 2 TIA/A	OCUA DEL	
	1 mg/m³ TWA	OSHA PEL	
	1 mg/m³ TWA	ACGIH TLV	
	1 mg/m³ TWA	Canada Ontario	
Yttrium Oxide	1 mg/m³ TWA	Canada Québec	
	1 mg/m³ TWA	France OEL	
	1 mg/m³ TWA, 3 mg/m³ STEL	UK OEL	
	2 mg/m³ TWA (respirable dust), 8 mg/m³ TWA (total dust)	Japan OEL	

Chemical	Exposure Limit		
	5 mg/m³ TWA	OSHA PEL	
	5 mg/m³ TWA	STEL ACGIHTLV	
	5 mg/m³ TWA	Canada Ontario	
Hafnium Oxide (as Hafnium)	5 mg/m³ TWA	Canada Québec	
	1 mg/m³ TWA	France OEL	
	5 mg/m³ TWA, 1.5 mg/m³ STEL	UK OEL	
	2 mg/m³ TWA (respirable dust), 8 mg/m³ TWA (total dust)	Japan OEL	
	E mg/m3 TMA (recnirable) 10 mg/m3 TMA (total dust)	OSHA PEL	
	5 mg/m³ TWA (respirable), 10 mg/m³ TWA (total dust)		
	1 mg/m³ TWA ((respirable) (aluminum insoluble compounds)	TWA ACGIHTLV	
	1 mg/m³ TWA ((respirable) (aluminum insoluble compounds)	TWA Canada Ontario	
	10 mg/m³ TWA	TWA Canada Québec	
Aluminum Oxide	1.5 mg/m³ TWA (respirable aerosol) 10 mg/m³ TWA (inhalable aerosol)	Germany OEL	
	10 mg/m³ TWA (respirable)	France OEL	
	4 mg/m³ TWA (respirable), 10 mg/m³ TWA (inhalable)	UK OEL	
	0.5 mg/m³ TWA (respirable), 2 mg/m³ TWA (total dust)	Japan OEL	

8.2. Exposure Controls:

Recommended Monitoring Procedures: None

Appropriate Engineering Controls: Use adequate general or local exhaust ventilation to minimize exposures

Personal Protective Measurers
Respiratory Protection:
None normally required. If the exposures are excessive and irritation is experienced an approved dust/mist respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with applicable regulations and good industrial hygiene

Eve Protection: Wear safety glasses if contact is possible

Skin Protection: None required. Wash hands thoroughly after handling.

Other protection: Protective clothing as required to avoid prolonged skin contact.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic Physical and Chemical Properties:Appearance: White solid block or slab

No odor Not applicable Not applicable Not applicable Odor Threshold: pH: Melting/Freezing Point: Initial Boiling Point/Range: Not applicable Flash Point: Not applicable Evaporation Rate: Flammability: (solid/gas) Flammable/ Explosive Limits: Not applicable
Not applicable
LEL: Not applicable
UEL: Not applicable Vapor Pressure: Not applicable Vapor Density: Not applicable Relative Density /Specific Gravity: 3 0-3 5 Solubility in Water:
Partition Coefficient:
(n-octanol/water) Not applicable Not applicable Auto-ignition Temperature: Decomposition Temperature: Not applicable Not determined Viscosity: Not applicable Not flammable Explosive Properties

9.2. Other Information:

SECTION 10: Stability and Reactivity

10.1 Reactivity: Not reactive 10.2 Chemical Stability: Stable 10.3 Possibility of Hazardous Reactions: None known. 10.4 Conditions to Avoid: Avoid dusty conditions 10.5 Incompatible Materials: None known. 10.6 Hazardous Decomposition Products: None known.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects:

Potential Health Effects: Inhalation: Dust may cause irritation of the upper respiratory tract with coughing and difficulty in breathing. Skin Contact: Prolonged skin contact may cause mechanical irritation Eve Contact: Dust may cause mechanical irritation with redness and tearing

estion: Swallowing large amounts may cause gastrointestinal irritation and nausea

Acute Toxicity:

Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >4.3 mg/L/4 hr (no mortalities, maximum attainable concentration)
Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >5.09 mg/L
Oral rat LD50 >5000 mg/kg, Inhalation rat LC50 >4.3 mg/L/4 hr (no mortalities, maximum attainable concentration) Yttrium Oxide: Hafnium Oxide:

Oral rat LD50 >10000 mg/kg; LC50 Inhalation rat >2.3 mg/L/4 hr Aluminum Oxide: None of the components cause skin irritation or corrosion. Skin corrosion/irritation:

Eye damage/irritation:

None of the components cause skin irritation or corrosion. Expected to cause mechanical eye irritation. None of the components cause eye irritation or corrosion. Expected to cause mechanical eye irritation.

None of the components are skin sensitizers.
No data available. Not expected to cause respiratory sensitization.

None of the components cause germ cell mutagenicity.

None of the components are listed as a carcinogen or potential carcinogen by IARC, NTP. ACGIL O. SNA or the CIP. Respiratory Sensitization: Germ Cell Mutagenicity:

NTP, ACGIH, OSHA or the CLP.

Developmental / Reproductive Toxicity: None of the components have been shown to cause reproductive or

developmental roxicity.

Specific Target Organ Toxicity (Single Exposure): No data available.

Specific Target Organ Toxicity (Repeated Exposure): No data available.

SECTION 12: Ecological Information

12.1. Toxicity Zirconium Oxide:

Hafnium Oxide

96 hr LC50 Danio rerio >100 mg/L

48 hr EC50 daphnia magna >100 mg/L, 72 hr EC50 Desmodesmus subspicatus >100 mg/L

Yttrium Ovide

96 hr LL50 Danio rerio >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 72 hr EL50 Desmodesmus subspicatus >100 mg/L

96 hr LC50 Danio rerio >100 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 72 hr EC50 Pseudokirchnerella subcapitata >100 mg/L

NOEC 96 hr Salmo trutta >100 mg/L,

NOEC 48 hr daphnia magna >100 mg/L, NOEC 72 hr Selenastrum capricornutum >100 mg/L 12.2 Persistence and Degradability: Biodegradation is not applicable to inorganic substances.

12.4 Mobility in Soil: No data available

12.5 Results of PVT and vPvB assessment None required 12.6 Other Adverse Effects: None known

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods: Dispose in accordance with all national and local regulations.

SECTION 14: Transport information

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	14.1 UN Number	14.2 UN Proper Shipping Name		14.5 Environmental Hazards
US DOT		Not Regulated		None
EU ADR/RID		Not Regulated		None
IMDG		Not Regulated		None
IATA/ICAO		Not Regulated		None

14.6 Special Precautions for User: None identified

14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code: Not applicable – product is transorted

SECTION 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

SARA Section 313 (40 CFR 372): This product contains the following toxic chemical(s) subject to reporting

SARA Section 311/312 (40 CFR 370) Hazard Categories: Not hazardous

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): This product is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulation CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements; however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

German WGK: nwg
Other EU Regulations: This product is classified and labeled in accordance with EC Directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 (REACH)

Japanese Regulations:

Manufacture Prohibited: Not applicable
Manufacture Allowed: Not applicable
Notification Obligation: Not applicable
Labeling Obligation: Yttrium Comp > 1% - Hafnium Comp > 1% - Aluminum Oxide > 1%
SDS Obligation: Yttrium Comp > 1% - Hafnium Comp > 1% - Aluminum Oxide > 1%

Poisonous and Deleterious Substances Control Law (PDSCL): None of the chemicals are listed.

Pollutant Release and Transfer Register (PRTP): None of the chemicals are listed.

Law Concerning the Protection of the Ozone Layer: None of the chemicals are listed.

Fire Service Law: None of the chemicals are listed.

Ship Safety Act: None of the chemicals are listed.

Aviation Law: None of the chemicals are listed.

Air Pollution Control Law: None of the chemicals are listed.

Mater Pollution Control Act: None of the chemicals are listed.

Water Pollution Control Act: None of the chemicals are listed.

Soil Contamination Countermeasures Law: None of the chemicals are listed.

Offensive Odor Control Law: None of the chemicals are listed.

Act on Prevention of Marine Pollution and Maritime Disaster: None of the chemicals are listed.

International Inventories
US EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA)

Chemical Substances Inventory or exempt.

Canadian Environmental Protection Act: All of the components in this product are listed on the Domestic

Canadian Environmental Protection Act: All of the components in this product are instead on the Bonnesac Substances List (DSL) or exempt.

European Union: All the components in this product are listed on the EINECS inventory or exempt.

China: All of the components in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or exempt.

Japan: All of the components in this product are listed on the Japanese Existing and New Chemical Substances (ENCS)

Korea: All of the components in this product are listed on the Korean Existing Chemicals List (KECL) or exempt.

New Zealand: All of the components in this product are listed on the New Zealand Inventory of Chemicals (NZIoC) or

Taiwan: All of the components of this product are listed on the National Existing Chemical Inventory (NECI) in Taiwan

15.2 Chemical Safety Assessment: None required

16.2 Other Information NFPA Rating: Fire: 1 Health: 2 Instability: 0

GHS Classification for Reference (See Sections 2 and 3):

May 31, 2017 N/A

Converted to GHS -0 All Sections Revised

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