

**MATERIAL SAFETY DATA SHEET**

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Manufactured by:

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**Section I. Material Identification & Code**

Ceramic Shapes and Parts manufactured from Silicon Nitride or Sialon

**Section II. Hazardous Ingredients/Identity Information**

Hazardous Components	CAS#	<sup>1</sup> OSHA PEL	<sup>2</sup> ACGIH	Other Limits	%
Silicon Nitride (Si <sub>3</sub> N <sub>4</sub> )	12033-89-5	*	*	-	40-100
Silicon Aluminum Oxynitride (Sialon)	--	*	*	-	0-100

Note: As a solid ceramic shape there is no consequential health hazard. Care should be taken to avoid breathing dust during machining or disposal of the material.

\* Limits not established for these materials.

<sup>1</sup>OSHA PEL : Occupational Safety and Health Administration (U.S.A.) Permissible Exposure Limit<sup>2</sup>ACGIH TLV : American Conference of Governmental Industrial Hygienists Threshold Limit Value**Section III. Physical and Chemical Data**

Boiling Point: NA	Melting Point: >1850°C	Specific Gravity (H <sub>2</sub> O=1): 2.90 - 3.30 g/cm <sup>3</sup>
Vapor Pressure: NA	Solubility in Water: NONE	

Evaporation Rate: None at room temperature

Appearance and Odor: Gray to white ceramic solid shapes, no odor.

**Section IV. Fire and Explosion Hazard Data**

Flash Point: NA	Flammable Limits: NA	LEL: NA	UEL: NA
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Extinguishing Media: Non-flammable

Special Fire Fighting Procedures: NA

Unusual Fire and Explosion Potential: NA

NA = Not applicable

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<b>Section V. Reactivity Data</b>			
Stability:	Unstable Stable	X	Conditions to Avoid: None
Incompatibility (Materials to Avoid): None			
Hazardous Decomposition or By products: Exposure to humidity or water vapor over very long periods of time may cause the release of ammonia gas.			
Hazardous Polymerization:	Will Not Occur May Occur	X	Conditions to Avoid: None
<b>Section VI. Health Hazard Data</b>			
Route(s) of Entry: Inhalation? Yes Skin? Yes Ingestion? NA Eyes? Yes			
Health Hazards (Acute and Chronic): This material is a solid article and has no health hazard unless dust is created by dry cutting. Acute exposure will have only nuisance dust effects.			
Signs and Symptoms of Exposure: Dust may cause irritation or the respiratory system, skin and eyes.			
Medical Conditions Aggravated by Exposure: Other pulmonary conditions and diseases			
Emergency and First Aid Procedures: Remove person to dust free area if irritation is caused. Skin: Wash with soap and water. Eyes: Flush with water.			
<b>Section VII. Precautions for Safe Handling and Use</b>			
Steps to be Taken in Case Material is Released or Spilled: NA			
Waste Disposal Method: Can be disposed of as non-hazardous waste in accordance with local regulations.			
Precautions to be Taken in Handling and Storing: Keep products dry. If wet, potentially violent cracking may occur in contact with molten metal.			
Other Precautions: Use safety glasses and approved dust mask in a well-ventilated area. Use proper procedures for handling so that airborne dust does not exceed the TLV. Wet cutting/grinding will prevent creation of dust.			
<b>Section VIII. Control Measures</b>			
Respiratory Protection (Specify Type): Use NIOSH approved dust respirator			
Ventilation	Local Exhaust- In areas where dust may be generated.		
Requirements:	Special- NA	Mechanical(General) - NA	Other - NA
Protective Gloves:	Abrasion resistant		Eye Protection: Safety glasses
Other Protective Clothing or Equipment: Metatarsal safety shoes			
Work/Hygienic Practices: Wash with soap and water.			

NA = Not applicable

The information contained in this Material Safety Data Sheet is believed to be accurate. However, McDanel Advanced Ceramic Technologies makes no warranty with respect to the accuracy of the information or the suitability of the recommendations and assumes no liability to any user based upon use of product or reliance upon the information contained in this Material Safety Data Sheet.

NA = Not applicable