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Porous Ceramics

Introduction

The range of Innovacera porous ceramic filters are made from aluminum oxide and silicon carbide. The strong, uniform porous ceramic has 40-50% open porosity with a tortuous pore structure and is available in pore sizes ranging from 1 to 120 microns. Monolithic, single grade, aluminum oxide porous ceramic is available in 1, 15, 30, 50, 60, 80, 100 and 120 micron pore sizes.

Aluminum oxide is the most standard material, with a density of 2.2 g/cc, and has a maximum operating temperature of 1400 °F (800 °C).

Silicon Carbide is more of a special order material, with a density of 1.9 g/cc, for more aggressive applications and has a maximum operating temperature of 1800 °F (1000 °C) and has excellent thermal shock resistance. These standard porous ceramic materials are naturally hydrophilic. For special applications they may be coated or impregnated to achieve a certain performance characteristic.

The range of porous ceramic products includes:

- Membrane and monolithic tubes
- Discs
- Plates and other components made from aluminum oxide and silicon carbide where tightly controlled pore size and porosity is critical.

Specifically tailored techniques include:

- Spraying
- Brushing
- Backwashing
- Oven firing
- Dilute acid cleaning
- Solvent cleaning plus steam
- Ultrasonic cleaning

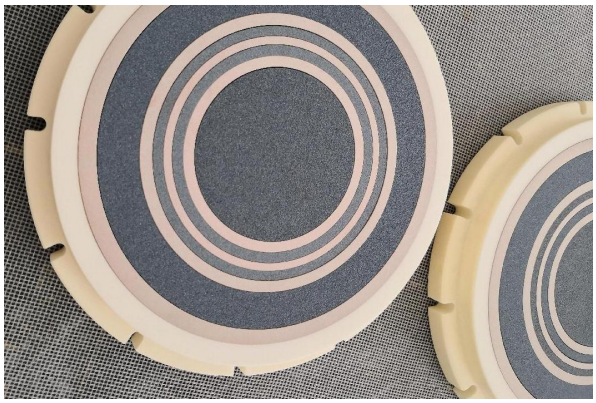
Porous Ceramics

- Used in tough applications to replace porous metal or as an alternative to plastic or fabric media
- Cleaned and reused using a variety of methods depending on the contaminant to be removed

Applications

- Filters for gases and liquids
- Capillary Electrophoresis
- Filtration for heavy metal ions (Cr, Ni etc) in water
- High temperature chemical support for gas absorption
- High efficiency flow through catalytic supports
- Gas burners
- Chromatography
- Micro trapping systems and bio-catalytic supports
- Vacuum holding plates (vacuum chunk)
- Nano-membrane supports for sensor applications
- Micro-bubble diffusers
- Fine or micro channels for electrophoresis
- Chemical or bio reactor

Available Porous Ceramics



- Alumina Porous Ceramic Components
- Silicon Carbide Porous Ceramic Components
- Max Size: 450mm

Properties

- Uniform pore sizes and high surface areas
- Excellent chemical resistance in both acid and alkaline conditions.
- Good wearing and erosion resistance.
- Withstands high temperature.
- Good rigidity and dimensional stability.
- Can be coated or immobilized with virtually any catalytic or other functional materials.
- High porosity and uniform pore size enable low resistance for both gas and liquid flow through applications.

Materials and Specifications

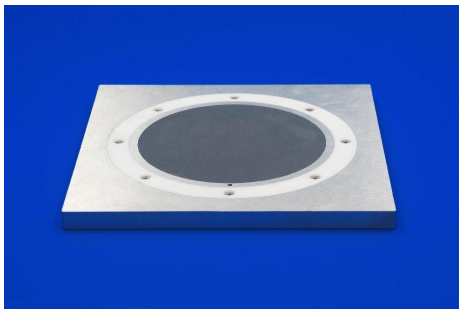
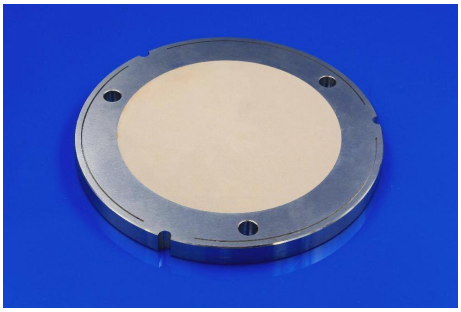
Alumina Porous Ceramic

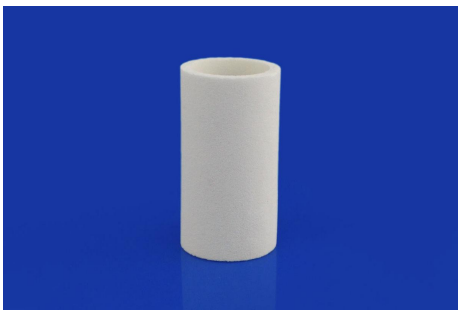
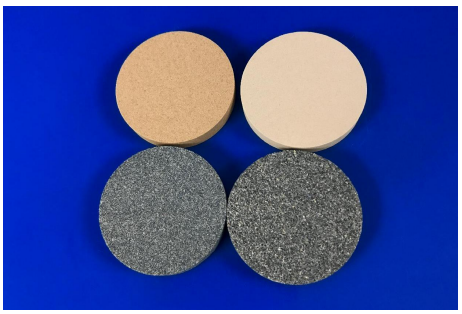
Properties	Unit	Value
Al_2O_3	%	≥80
SiO_2	%	16-18
Density	g/cm^3	2.3—2.5
Hardness (HRA)	HRA	50
Flexural Strength	MPa	40
Compressive Strength	-	600
Porosity	%	40
Pores Diameter	μm	1-5, 15, 30, 40, 50, 100
Operating Pressure	MPa	≤10
Acid Resistance	mg/cm^2	≤10.0
Alkali Resistance	mg/cm^2	≤20.0

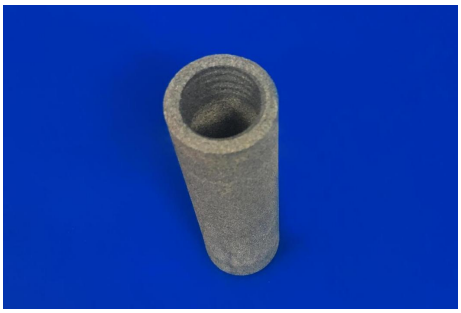
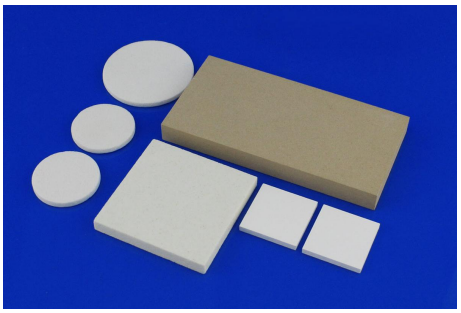
Silicon Carbide Porous Ceramic

Properties	Unit	Value
SiC Content	%	≥85
SiO_2 Content	%	12
Density	g/cm^3	2.0-2.2
Hardness (HRA)	HRA	≥40
Flexural Strength	MPa	≥30
Compressive Strength	MPa	≥500
Porosity	%	40
Pores Diameter	μm	15, 30, 50
Work Pressure	MPa	≤10.0
Acid Resistance	mg/cm^2	≤15.0
Alkali Resistance	mg/cm^2	≤25.0
Antistatic	-	√

Show Case

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