

Pegasus™ 100 Series Coatings

Fluorine etch-resistant coatings

Entegris' Pegasus™ 100 series coatings are a family of precision-engineered PVD coatings tailored for fluorine plasma etch applications. Pegasus 100 series coatings are Yttrium-based oxide coatings deposited at low temperatures.

Pegasus 100 series coatings can be deposited on aluminum, alumina, stainless steel and other commonly used substrate materials, with superior adhesion. These coatings are high purity, exhibit homogeneous microstructure and are conformal to the substrate surface.

Entegris' Pegasus 100 series coatings are excellent barriers to corrosive chemistries in a semiconductor etch environment, protecting surfaces from erosion and minimizing particle generation. These coatings have the highest etch/erosion resistance in fluorine plasma environments. They are highly dense compared to plasma sprayed coatings, microcrystalline and conformal, which improves device yield and the productivity of semiconductor etch tools in a manufacturing environment.

APPLICATIONS

- Semiconductor chamber components

FEATURES & BENEFITS

- Fluorine etch resistance
- Oxidation resistance
- Low particle generation
- Dense and transparent

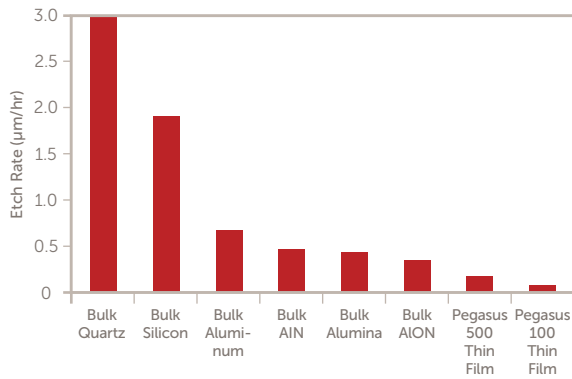


SPECIFICATIONS

Substrate	Compatibility	Metals, Ceramics (e.g., Alumina, AlN) and Semiconductors
	Size	Up to 1016 mm D x 508 mm H (40" D x 20" H)
Structure	Microcrystalline	
Temperature	Deposition	200°C (392°F)
	Use	1000°C (1832°F)
Coating thickness	Up to 10 µm	
Electrical resistivity	~ 10 ¹² Ω-cm	
Purity	>99%	
Hardness	1400 HV	
Elastic modulus	160 GPa	
Roughness	Conformal — substrate dependent	
Wear resistance	Very good	
Corrosion resistance	Excellent etch resistance in fluorine environments	
	Oxidation-resistant up to 1000°C (1832°F) in air	
	Resistant to most acids and alkalis	

CHARACTERISTICS

Etching Rate Performance*

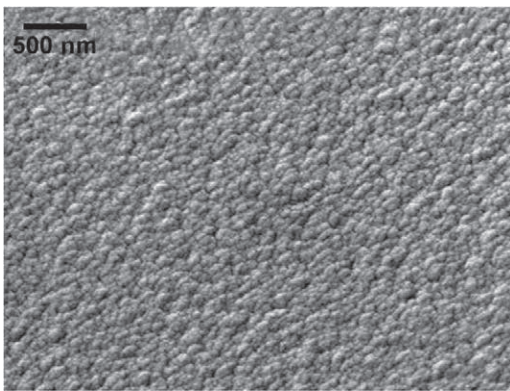


* Tested under CF_4+O_2 reactive plasma for 4 hours.

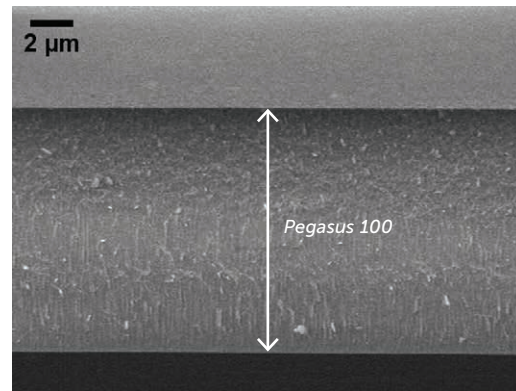
Note: The fluorine plasma etch rate is highly non-linear with exposure time. Pegasus coatings are expected to last 10,000 RF hours of plasma exposure.

SEM Images of Pegasus 100 Series Coatings

Coating Surface Morphology



Coating Cross-section



FOR MORE INFORMATION

To learn more about how Entegris' high-purity specialty coatings help customers enhance yields, improve productivity and meet future technological needs, call Entegris at +1 781 538 8745.

To review Entegris' specialty coatings offering, visit Entegris' website at www.EntegrisSpecialtyCoatings.com.

TERMS AND CONDITIONS OF SALE

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Corporate Headquarters
129 Concord Road
Billerica, MA 01821
USA

Customer Service
Tel +1 952 556 4181
Fax +1 952 556 8022
Toll Free 800 394 4083

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