



## ULTRAPURE SILICON COATING (99.9995%)

*Ultrapure coating for contamination control*

### Overview

Entegris offers an ultra high purity silicon coating (99.9995%) that is dense, micro-conformal, highly adherent and extremely smooth for a variety of applications. The silicon coatings are deposited by a proprietary Plasma Enhanced Chemical Vapor Deposition (PECVD) process which is versatile and allows for a high degree of flexibility in coating a variety of substrate materials. The coatings have low internal stress, therefore can be deposited in thicknesses ranging from <1 micron to 100+ microns depending on substrate material and finish.

Entegris silicon coatings are ideal in ion implant, wafer bonding and plasma nitriding applications. Other emerging applications show a need for silicon coatings such as substrates for optical mirrors, where precision polishing (sub-nanometer roughness) is desired.

### Applications

- Particle and metals contamination reduction in semiconductor wafer processing
- High-precision optical mirrors for air, space and terrestrial applications

### Specifications

Substrate:	Compatibility	Metals, ceramics (AlN, Al <sub>2</sub> O <sub>3</sub> , quartz, PSZ, graphite, SiC, etc.) and polymers
	Size	Up to 91 cm (36")
	Geometry	Any shape, including complex geometries
Structure:	Amorphous; contains hydrogen	
Temperature:	Deposition	Below 150°C (302°F)
	Use	-50°C to 600°C (-58°F to 1112°F)
Coating thickness:	A few nm to over 150 μm	
Electrical resistivity:	5 × 10 <sup>8</sup> Ω-cm, lower values possible	
Hardness:	600 HV	
Purity:	99.9995%	
Wear resistance:	Good	
Corrosion resistance:	Excellent resistance to aqueous, alkaline and most acid environments	

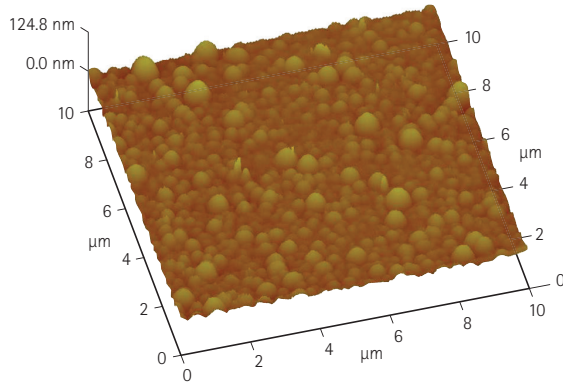


### Features

- Ultra high purity
- Low residual stress
- Dense, hard and micro-conformal
- Can be polished or single-point diamond turned to optical finish

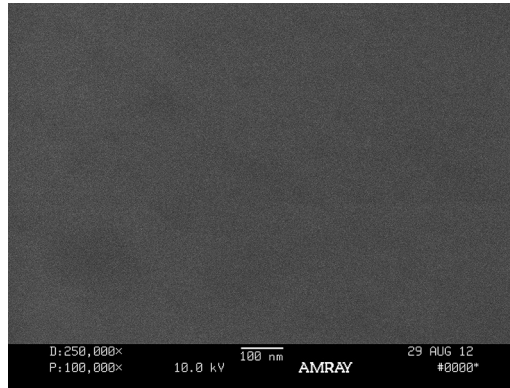
## Characteristics

### AFM Image of Ultrapure Silicon Coating (99.9995%)

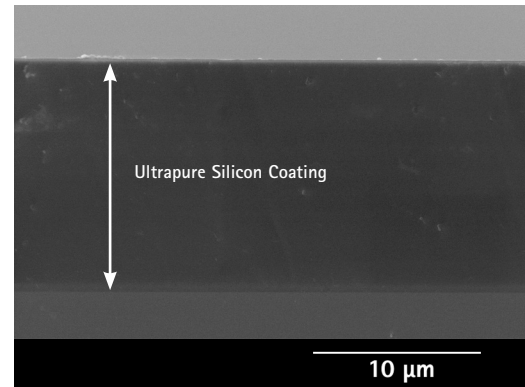


### SEM Images of Ultrapure Silicon Coating (99.9995%)

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](http://www.EntegrisSpecialtyCoatings.com).

## Terms and Conditions of Sale

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit [www.entegris.com](http://www.entegris.com) and select the Legal Notices link from the footer.

Entegris®, the Entegris Rings Design® and Creating a Material Advantage® are registered trademarks of Entegris, Inc.

### ENTEGRIS, INC.

Corporate Headquarters | 129 Concord Road | Billerica, MA 01821 USA  
Customer Service Tel. +1 952 556 4181 | Customer Service Fax +1 952 556 8022  
In North America 800 394 4083 | [www.entegris.com](http://www.entegris.com)

©2008–2014 Entegris, Inc. All rights reserved Printed in USA 6102-5477ENT-0614

  
creating a material advantage