



Engineering Better Material Solutions

**-PRODUCT SPECIFICATION-**

**UltraC-HT™♣**

*-Mono-dimensionally modulated multilayer tough coating*

**UltraC-HT™** is an innovative, multi-layer, fully dense coating based on our UltraC™ hard carbon coating technology. This mono-dimensionally modulated (MDM) coating system consisting of individual layers of the two materials differing in elastic modulus, has high strength, toughness and excellent resistance to erosion and wear. It is suitable for a wide range of precision applications in demanding environments encompassing semiconductor wafer processing, biomedical engineering and aerospace.

Property	UltraC- HT™
Substrate	Most metals and Ceramics (AlN, Al <sub>2</sub> O <sub>3</sub> , Quartz, YSZ, Si, Graphite, etc), Silicon wafers and Polymers.
Structure	Dense, amorphous, mono-dimensionally modulated (MDM), multilayered
Deposition Temperature, °C	150
Use Temperature, °C	-50 to 550
Coating Thickness, μm	1-25
Substrate size	Up to 36"
Substrate Geometry	Any shape including complex ones
Electrical Resistivity, Ω-cm	~10 <sup>8</sup>
Co-efficient of friction	0.02
Hardness, DPHN	>2000 DPHN
Wear/Abrasion resistance	Excellent
Corrosion Resistance	Most acids and alkalis, acid fluxes and solders
Applications	<ul style="list-style-type: none"> <li>• Biomedical implants</li> <li>• Aerospace turbine compressor blades</li> <li>• Air bearings</li> </ul>
Special Property	<ul style="list-style-type: none"> <li>• Multilayer provides high strength and extreme toughness</li> <li>• Super lubricious in both dry and humid air</li> <li>• Excellent abrasive/erosion wear resistance</li> </ul>

♣Patent pending