

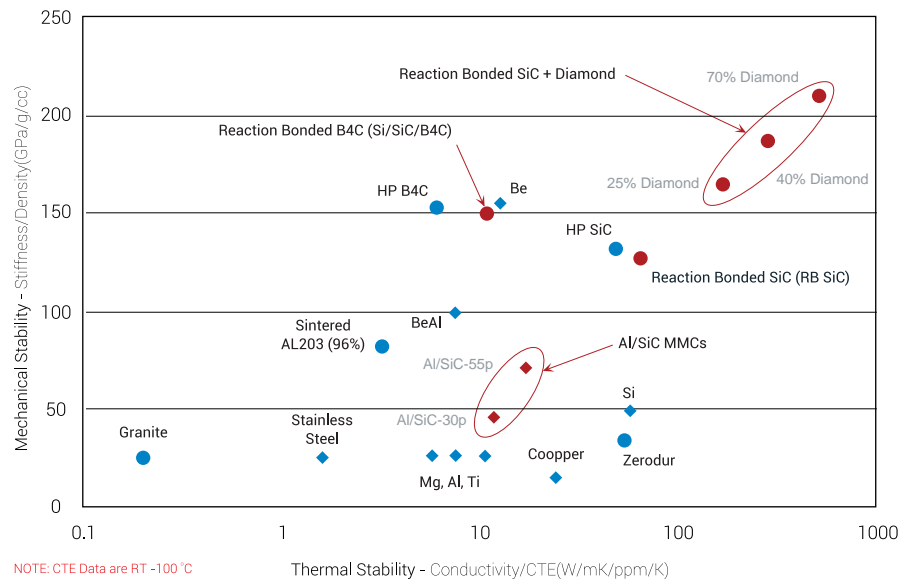
M Cubed Technologies, a subsidiary of II-VI Corp., is a leading provider of advanced metal matrix composites (MMCs) and reaction bonded ceramics to the semiconductor equipment, LCD equipment, wear, refractory, optics, defense, and thermal management markets. Development and manufacturing facilities are located in Connecticut and Delaware, and sales offices are based in the US, Korea, and Japan. M Cubed provides its customers with optimized turn-key solutions, starting with product design and analysis support, followed by material selection, fabrication and finishing. Key strengths of M Cubed include significant size and shape capability, large manufacturing scale, and tailorable material properties to meet application need.

## THERMADITE® SiC + Diamond

M Cubed's unique SiC + Diamond composites provide unmatched performance in applications requiring wear resistance, low friction, thermal stability, mechanical stability, heat spreading, and corrosion resistance.

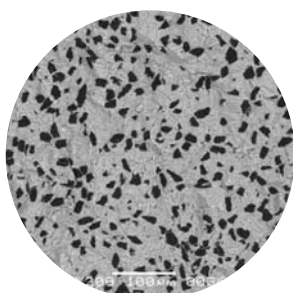
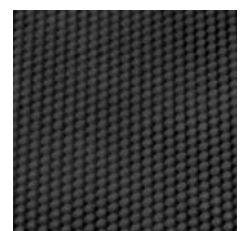
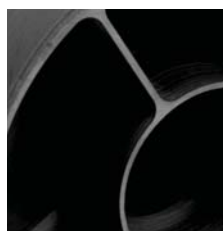
Key attributes of THERMADITE® SiC + Diamond composites are:

- Near and near-net shape manufacturing
- Internal channel capability
- Diamond contents from 10 to 70%
- Matrix phase of Si/SiC
- Ability to reduce Si content to < 1%
- Patent protected processes



## Applications for SiC + Diamond composites include:

- Burred Si vacuum wafer chucks and wafer tables
- Wear resistant, low friction seals
- Thermal management heat sinks
- High energy laser mirror substrates
- Nozzles
- Armor tiles



35% Diamond Composite

## THERMADITE® 100-60

THERMADITE® 100-60 is a standard version of SiC + Diamond that meets the requirements of many applications. Characteristics of THERMADITE® 100-60 are:

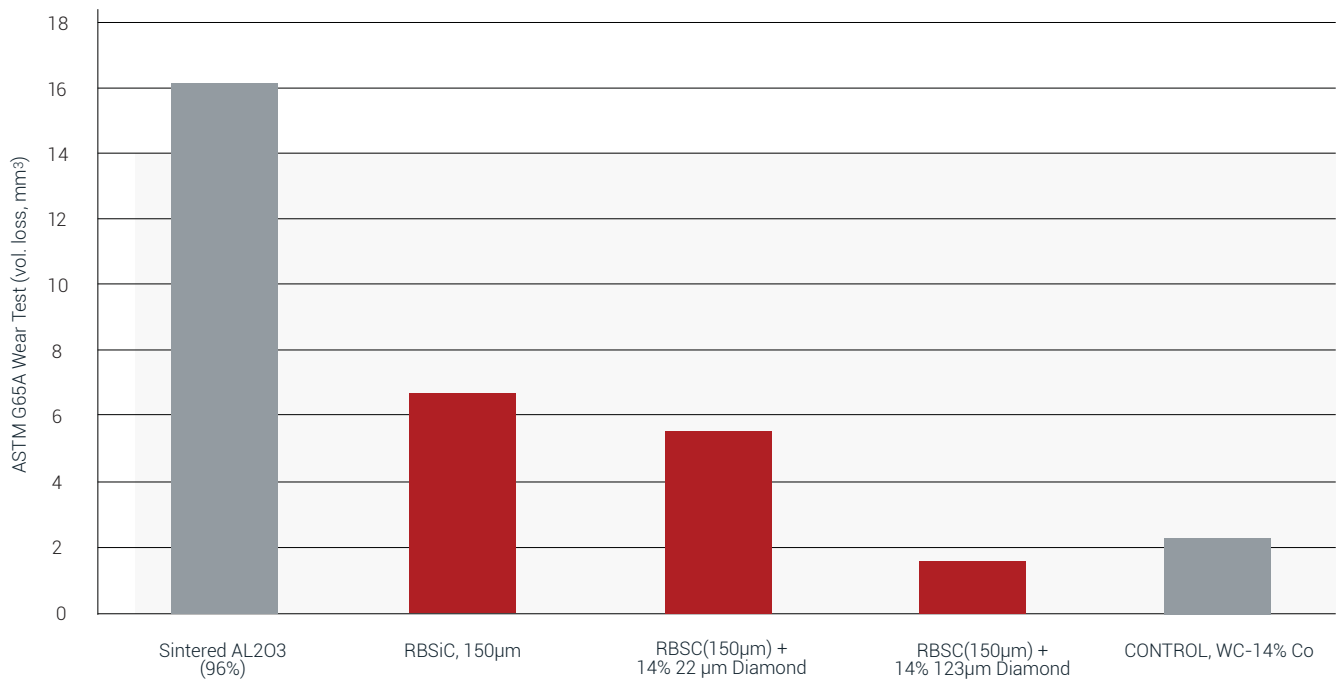
- 60 vol. % of 100 um diamond
- Machinable by EDM
- Ultra-high stiffness and thermal conductivity
- Manufacturable in component sizes > 500 mm

# MICROSTRUCTURE AND PROPERTY DATA

## Property Comparisons

Material	Density (g/cc)	Young's Modules (GPa)	CTE (ppm/K- RT to 100°C)	Thermal Conductivity (W/mK -RT)
M Cubed Reaction Bonded SiC – RBSC (Grade SSC-702)	2.95	350	2.9	170
M Cubed SiC + Diamond Composite (Grade THERMADITE® 100-60)	3.20	650	1.5	540

## ASTM G65A Wear Test Comparison



REV 082115

[www.mmmt.com](http://www.mmmt.com)