

# CMX850

## PHYSICAL AND METALLURGICAL PROPERTIES

PROPERTY	MEASUREMENT	APPLICABLE STANDARD
Mean coefficient of thermal expansion ( $10^{-6}/^{\circ}\text{C}$ ) for temperature range $150^{\circ}\text{C}$ to $500^{\circ}\text{C}$	4.2	ASTM E228-06
Transverse Rupture Strength Characteristic strength (MPa)	2387	ASTM C1239
Weibull Modulus	6	
Fracture Toughness Mean ( $\text{MPa}\cdot\text{m}^{1/2}$ )	11.3 to 15.5	Shetty et al. (1995)
Elastic modulus (GPa)	827	ASTM E494
Poisson's Ratio	0.08	
Density ( $\text{g}/\text{cm}^3$ )	4.37	Archimedes Principle
Thermal conductivity ( $\text{W}/\text{m}/\text{K}$ ) at $500^{\circ}\text{C}$	253.5	Calculated from Thermal Diffusivity, Specific Heat Capacity and Density
Knoop Hardness (Indentation)(GPa)	50	ASTM C1326-03

### DIAMOND GRAIN SIZE ( $\mu\text{m}$ )

0.5 to 1

### COBALT RATIO (wt%)

$\geq 15$

All property measurements are carried out, where possible, in accordance with relevant international standards. The data quoted is for comparative purposes only and should not be viewed as a product specification. Element Six Limited is constantly striving to improve its products and therefore reserves the right to alter product properties without prior notice.

## TYPICAL MICROSTRUCTURE



BEC 20kV SS50 x500 Magnification 50 $\mu\text{m}$



## FOR MORE INFORMATION

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