

Cambridge Materials Selector

The Cambridge Materials Selector (CMS) is a Windows based PC toolkit for the evaluation and selection of materials for engineering design. Developed at Cambridge University, the Cambridge Materials Selector uses an extensive suite of databases containing the mechanical, thermal and electrical properties of a wide range of materials including ceramics, metals, polymers, elastomers and composites. Property data is presented in a graphical format to provide a series of 'material selection charts' which, when combined with the use of performance indexes, enable the rapid identification of the optimum materials for a specific design.

The Cambridge Materials Selector (CMS) is a Windows based PC toolkit that features the use of graphical materials selection charts and databases of material properties. The databases contain all the main classes of engineering materials including metals, polymers, ceramics, elastomers and composites. Over 50 properties are stored for each material, including mechanical, thermal, electrical, price, forming and joining methods, typical uses and suppliers.

The use of the Cambridge Materials Selector will encourage and develop an understanding of the properties of materials and their role in design. It provides an extensive data source for a wide range of materials and a cost effective computer based system easily used for student practicals and workshops

The screenshot shows the 'CMS - Properties' window with a 'Property Filter' set to 'Silver alloys'. The window displays a list of material properties and their values for Silver alloys. The properties are grouped into 'General' and 'Mechanical' categories.

Property Name	Value 1	Value 2	Unit
Name	Silver alloys		
Identifier	MAG_988		
Short Name	Ag Alloys		
Designation	Ag Alloys		
Composition	Ag Alloys		
General			
Atomic Volume (m ³ /mole)	1.01	- 0.296	m ³ /mole
Density	10.2	- 10.5	Mg/m ³
Energy Content	125	- 130	MJ/Kg
Price	300	- 450	\$/Kg
Residual Fraction	0.8	- 0.95	
Mechanical			
Elastic Modulus	80	- 127	GN/m ²
Compressive Strength	30	- 50	MPa
Yield Strength	5.2	- 0.8	MPa
Elastic Limit	30	- 50	MPa
Endurance Limit	28.9	- 111	MPa
Fracture Toughness	80	- 90	MPa m ^{1/2}

<http://www.granta.co.uk/products.cms.program.html>

Platform: Windows NT
 License restrictions: none
 Number of copies: 20
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