

# DURATEC® MACHINABLE CERAMIC FOR ENGINEERING APPLICATIONS

Duratec<sup>®</sup> materials are versatile, asbestos free, machinable technical ceramics manufactured from calcium silicate. With a maximum service temperature of 1000°C, these materials provide excellent thermal and electrical insulation. Duratec<sup>®</sup> materials have been designed to be easily machined with appropriate tooling to give high definition finishes without chipping or breaking. High speed steel, carbide or diamond tipped tools can all be used to machine Duratec<sup>®</sup>, by following traditional engineering techniques.

Goodfellow Ceramic and Glass Division can offer Duratec® materials as rods, bars, sheets and finished components.

CHARACTERISTICS	Duratec <sup>®</sup> 750	Duratec <sup>®</sup> 1000
Maximum available size	1220x1500x75mm	1220x1500x50mm
Nominal Density	1400kg/m <sup>3</sup>	1400kg/m <sup>3</sup>
Flexural Strength	23MPa	16MPa
Hardness	80 (Shore D)	70 (Shore D)
Compressive strength at 10% compaction	55MPa	31MPa
Maximum service temperature	1000°C	1000°C
Thermal conductivity at 750°C	0.49W/mK	0.37W/mK
Shrinkage at 750°C for 12 hours (length, width, thickness)	0.14/1.1%	0.12/0.8%
Loss on ignition	7.3%	5.3%
Coefficient of thermal expansion at 100-750°C	6.6 x 10 <sup>-6</sup>	6.4 x 10 <sup>-6</sup>
Flatwise electrical strength	7300kV/m	4700kV/m
Arc resistance, Stage 40 (40mA)	>420 seconds	>420 seconds
Volume resistivity 25°C 600°C	$9.0 \times 10^{10} \Omega cm$ 1.0 x 10 <sup>10</sup> Ωcm	7.5 x 10 <sup>10</sup> Ωcm 3.1 x 10 <sup>10</sup> Ωcm
Surface resistivity 25°C 600°C	10.0 x 10 <sup>10</sup> Ωcm 7.0 x 10 <sup>9</sup> Ωcm	4.1 x 10 <sup>10</sup> Ωcm 3.9 x 10 <sup>9</sup> Ωcm
Relative permittivity 25°C 600°C	7.6 21.0	4.7 4.0
Dissipation factor 25°C 600°C	250 400	640 510

Properties shown are typical values, they are not absolute material properties, and should be used for guidance only. It is recommended that materials and components are tested for their suitability for a specific application.

For more information and advice please discuss your application with our sales staff.

Typical applications: Arc shields and chutes Heater housings

Electrical formers Component mounting plates

Element supports Furnace door linings and gaskets

→ www.goodfellow-ceramics.com

→ ceramic@goodfellow.com



Glass and Ceramics for Science and Industry

USA

Goodfellow Corporation Tel: +1 800 821 2870 Fax: +1 800 283 2020

#### France

Goodfellow SARL Tel: 0800 917 241 (n° vert) or +44 1480 424813 Fax: 0800 917 313 (n° vert) or +44 1480 424900

## Germany

Goodfellow GmbH Tel: 0800 1000 579 (freecall) or +44 1480 424810 Fax: 0800 1000 580 (freecall) or +44 1480 424900

## People's Republic of China

Goodfellow Shanghai Office Tel: +86 21 6112 1560 Fax: +86 21 6130 4901

## UK and all other countries

Goodfellow Cambridge Ltd Tel: 0800 151 3115 (Freephone) or +44 (0)1480 424888 Fax: 0800 151 3225 (Freephone) or +44 (0)1480 424988