



BCA Abrasive Grains

High performance ceramic grains for universal use

TYROLIT BCA Abrasive Grains

BCA is a blue ceramic alumina abrasive grain. It is a composite material consisting of microstructured alpha alumina and rare earth alumina platelets. The grain combines unique self-sharpening properties with a high hardness and toughness. BCA can be used in a wide range of applications. The self-sharpening ability drives the performance of conventional bonded and coated abrasive products to their highest levels.

Physical properties

Colour	Hardness	Specific density	Type
Blue	19 – 21 GPa	>3.86 g/cm ³	Non-seeded Sol-gel

Chemical composition

	Al ₂ O ₃	MgO	Y ₂ O ₃	La ₂ O ₃	Traces
in %	94 – 96	0.8 – 1.8	0.6 – 1.6	2.2 – 3.2	SiO ₂ , TiO ₂ , CoO, CaO

Applications:

BCA is used in a great variety of applications where highest performance and a long tool life are required. Typical applications include roll grinding, spring end grinding, gear honing and high-performance coated abrasives. Coated abrasives with BCA ceramic grain are outstanding for work on stainless steel, high-alloy steels, titanium, nickel-based and cobalt-based alloys.

Bulk density P-grits (coated abrasives, in g/cm³)

Grit	Min. – Max.	Grit	Min. – Max.
P20	1.80 – 1.90	P60	1.70 – 1.80
P24	1.78 – 1.88	P80	1.67 – 1.77
P30	1.77 – 1.87	P100	1.65 – 1.76
P36	1.77 – 1.87	P120	1.64 – 1.74
P40	1.74 – 1.84	P150	1.62 – 1.72
P50	1.70 – 1.80	P180	1.62 – 1.72



Self-sharpening edges for highest performance

Bulk density F-grits (bonded abrasives, in g/cm³)

Grit	Min. – Max.	Grit	Min. – Max.
F14	1.86 – 2.00	F60	1.72 – 1.86
F16	1.84 – 1.98	F70	1.72 – 1.86
F20	1.84 – 1.98	F80	1.70 – 1.84
F24	1.82 – 1.96	F90	1.70 – 1.84
F30	1.80 – 1.94	F100	1.67 – 1.81
F36	1.79 – 1.93	F120	1.66 – 1.80
F40	1.76 – 1.90	F150	1.63 – 1.77
F46	1.75 – 1.89	F180	1.62 – 1.76
F54	1.74 – 1.88	F220	1.61 – 1.75

Ceramic Coating:

BCA can be supplied with a ceramic coating to enhance the bonding of the abrasive grain into a resin matrix. The coating results in a notably improved lifetime of resin bonded and coated abrasives. The following ceramic coating types are available:

- Red coated **BCA-RC**
- Silicate coated **BCA-SC**

The coating can affect the bulk density by ± 0.02 – 0.03 g/cm³