

Cerpass DGE™ For Bonded Abrasives



CERPASS DGE™ is a next-generation seeded gel product that offers extreme angularity achieved by Saint-Gobain's globally patented explosion technology. CERPASS DGE™ abrasive grain has the same unique nano-structure as CERPASS XTL™. This unique microstructure, composed of extremely uniform, sub-micron crystals, is designed to fracture conchoidally when stressed. The combination of the grains' extreme sharpness and microstructure allows for an aggressive cutting and long-lasting ceramic grain ideal for low-pressure tough-to-grind applications.

Physical properties (typical)

Compound	Alpha Aluminum Oxide	Hardness (GPa)^A	21.60
Color	White Translucent to Off-white /Opaque	Density (g/cm³)^B	3.91
Shape	Extra Sharp	Crystal Size (µm)^C	0.17

A: by Vickers Diamond Indent Method

B: by Helium Pycnometry

C: by Uncorrected Intercept Method of SEM Photographs

Chemical properties (typical)

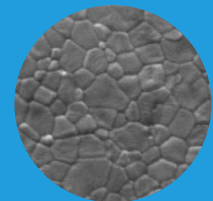
Predominant Chemical Composition		Al ₂ O ₃ ≥ 99.6 %	
Trace Chemical Composition			
Constituent	Typical PPM	Constituent	Typical PPM
TiO ₂	<2000	CaO	<100
SiO ₂	<700	Fe ₂ O ₃	<200
NaO ₂	<100	MgO	<150

Product Availability: Macro-Sized Grains – Untreated

CERPASS® Code	Macro Grain Shape	Treatment	Sizing	Grit Sizes
DGE-0789	Extra Sharp	Untreated	FEPA-F	24, 30, 36, 46, 54, 60, 70, 80



Macrostructure of individual Extra Sharp exploded CERPASS DGE™ - 0123 grains.



An actual scanning electron microscope (SEM) photograph, at 50,000 magnification, shows the unique and sub-micron crystal structure of CERPASS DGE™ grains.



Loose Pack Density (LPD) Limits: (Macro Sizes)

PD: Codes DGE-0789 – Extra Sharp Shape

Fédération Européenne des Fabricants de Produits Abrasifs (FEPA-F), FEPA-standard 44-GB-1986 R 1993

Grit Size	Lower Limit (g/cm3)	Upper Limit (g/cm3)	Grit Size	Lower Limit (g/cm3)	Upper Limit (g/cm3)
24	1.53	1.65	54	1.57	1.69
30	1.53	1.65	60	1.58	1.70
36	1.53	1.65	70	1.58	1.71
46	1.56	1.68	80	1.59	1.71

Sizing Convention and Specifications:

Sizing Fractions – Distribution Control

CERPASS® Code DGE-0789 – Extra Sharp Shape is processed to Fédération Européenne des Fabricants de Produits Abrasifs (FEPA-F), FEPA-standard 42-GB-1984 R 1993..

	Control Screen Coarse Screen	Oversize	First Nominal	Second Nominal	Control Screen Fine Grain
Grit Size	Test Sieve 1	Test Sieve 2	Test Sieve 3	Test Sieve 3 & 4	
24	+16/0	+20/(0-25)	+25/45+	(+25+30)/65+	-35/(0-3)
30	+18/0	+25/(0-25)	+30/45+	(+30+35)/65+	-40/(0-3)
36	+20/0	+30/(0-25)	+35/45+	(+35+40)/65+	-45/(0-3)
46	+30/0	+40/(0-30)	+45/40+	(+45+50)/65+	-60/(0-3)
54	+35/0	+45/(0-30)	+50/40+	(+50+60)/65+	-70/(0-3)
60	+40/0	+50/(0-30)	+60/40+	(+60+70)/65+	-80/(0-3)
70	+45/0	+60/(0-25)	+70/40+	(+70+80)/65+	-100/(0-3)
80	+50/0	+70/(0-25)	+80/40+	(+80+100)/65+	-120/(0-3)

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