

Cerpass DGE™ For Coated 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)

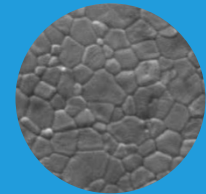
Predominant Chemical Composition		Al ₂ O ₃ ≥ 99.6 %	
Trace Chemical Composition			
Constituent	Typical PPM	Constituent	Typical PPM
TiO ₂	<2000	CaO	<100
SiO ₂	<700	Fe ₂ O ₃	<200
NaO ₂	<100	MgO	<150

Product Availability: Macro-Sized Grains Treated and Untreated

CERPASS® Code	Macro Grain Shape	Treatment	Sizing	Grit Sizes
DGE-0123	Extra Sharp	Untreated	FEPA-P	P24, 36†, 40†
DGE-0456	Weak, Splintery	Treated Magnesium Chloride	FEPA-P	P24, 36†, 40†, 50†, 60†, P80



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-0123 and DGE-0456 – Extra Sharp Shape

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

Grit Size	Lower Limit (g/cm ³)	Upper Limit (g/cm ³)
P24	1.53	1.65
36T†	1.53	1.65
40T†	1.53	1.65
50T†	1.57	1.69
60T	1.58	1.70
P80	1.60	1.70

† Sizing slightly modified from FEPA-P sizing standard

LPD measured on untreated grains

Sizing Convention and Specifications:

Sizing Fractions – Distribution Control CERPASS® Codes DGE-0123 and DGE-0456 – Extra Sharp Shape, are processed to Fédération Européenne des Fabricants de Produits Abrasifs (FEPA-P), FEPA-standard 43-GB-1984 R 1993.

	Control Screen Coarse Screen	Oversize	First Nominal	Second Nominal	Third Nominal	Control Screen Fine Grain
Grit Size	Test Sieve 1	Test Sieve 2	Test Sieve 3	Test Sieve 4	Test Sieves 5	
P24	+14/0	+18/(0-1)	(+18+20)/(10-18)	(+18+20+25)/(52-70)	(+18+20+25+30)/92+	-30/(0-8)
36T†	+18/0	+25/(0-1)	(+25+30)/(14-22)	(+25+30+35)/(56-74)	(+25+30+35+40)/90+	-40/(0-10)
40T†	+25/0	+35/(8-15)	(+35+40)/(57-73)	(+35+40+45)/91+	(+35+40+45+50)/97+	-50/(0-3)
50T†	+30/0	+40/(3-10)	(+40+45)/(36-52)	(+40+45+50)/(80-92)	(+40+45+50+60)/94+	-60/(0-6)
60T†	+35/0	+45/(0-7)	(+45+50)/(15-35)	(+45+50+60)/(56-74)	(+45+50+60+70)/92+	-70/(0-8)
P80	+45/0	+60/(0-3)	(+60+70)/(20-32)	(+60+70+80)/(66-84)	(+60+70+80+100)/96+	-100/(0-4)

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