Cerpass XTL™
For Coated Abrasive Tools

CERPASS XTL™, the original seeded gel product, offers the most durable ceramic grains available today. The unique nano-structure of the grains, composed of extremely uniform, sub-micron crystals, are designed to fracture conchoidally when stressed. The combination of grain shape and microstructure allows for an aggressive cutting but long-lasting ceramic grain ideal for use in organic and vitrified bond-systems.

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	Weak and splintery	**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)

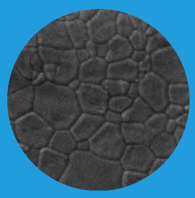
Predominant Chemical Composition	Al_2O_3 ≥ 99.6 %		
Trace Chemical Compositon			
Constituent	Typical PPM	Constituent	Typical PPM
TiO_2	<2,000	CaO	<100
SiO_2	<700	Fe_2O_3	<200
NaO_2	<100	MgO	<150

Product Availability: Macro-Sized Grains Treated and Untreated

CERPASS ® Code	Macro Grain Shape	Treatment	Sizing	Grit sizes
XTL-0570	Weak, Splintery	Untreated	FEPA-P	P24, 36T††, 40T††, 50T††, 60T††, P80, P100, P120, P150, P180, P220
XTL-0580	Weak, splintery	Treated Magnesium Chloride	ANSI or FEPA-F	P24, 36T††, 40T††, 50T††, 60T††, P80, P100

†† Sizing slightly modified from FEPA-P sizing standard

Macrostructure of individual Weak Splintery-shaped CERPASS XTL™-0570 grains



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

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For Bonded Abrasive Tools

Loose Pack Density (LPD) Limits: (Macro Sizes)
LPD: Codes XTL-0570 and XTL-0580 – Weak, Splintery Shape. American National Standards Institute (ANSI), ANSI B74.4-1992 (R2002), and 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)	Grit Size	Lower Limit (g/cm^3)	Upper Limit (g/cm^3)
P24	1.80	1.90	P100	1.65	1.75
36T†	1.77	1.87	P120	1.63	1.73
40T†	1.76	1.86	P150	1.63	1.73
50T†	1.75	1.85	P180	1.62	1.72
60T†	1.74	1.84	P220	1.62	1.72
P80	1.65	1.80			

†Sizing slightly modified from FEPA-P sizing standard

LPD measured on untreated grains

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	Control Screen Coarse Grain	Oversize	First Nominal	Second Nominal	Third Nominal	Control screen Fine Grains
Grit Size	Test Sieve 1	Test Sieve 2	Test Sieve 3	Test Sieve 4	Test Sieve 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)
P100	+50/0	+70/(0-1)	(+70+80)/(10-18)	(+70+80+100)/(52-70)	(+70+80+100+120)/92+	-120/(0-8)
P120	+70/0	+100/(0-7)	(+100+120)/(34-50)	(+100+120+140)/(80-92)	(+100+120+140+170)/96+	-170/(0-4)
P150	+80/0	+120/(0-3)	(+120+140)/(20-32)	(+120+140+170)/(66-84)	(+120+140+170+200)96+	-200/(0-4)
P180	+100/0	+140/(0-2)	(+140+170)/(10-20)	(+140+170+200)/(50-74)	(+140+170+200+230)/90+	-230/(0-10)
P220	+120/0	+170/(0-2)	(+170+200)/(10-20)	(+170+200+230)/(50-74)	(+170+200+230+270)/90+	-270/(0-10)

For more information, please contact:

Saint-Gobain Ceramic Materials Specialty Grains and Powders
1 New Bond Street
M/S 525-203
PO Box 15137
Worcester, MA 01615-0137
USA
Tel: +1 800 243 0028
Fax: +1 508 795 2380

Saint-Gobain K.K. CM Division
Kitahama 1-Chome Heiwa Bldg. 7F
1-1-14, Kitahama, Chuo-ku,
Osaka
541-0041 Japan
Tel: +81 6 4707 1700 (main)
Fax: -81 6 4707 1701

Saint-Gobain Ceramic Materials Specialty Grains and Powders
7th Floor, Office Tower
No. 222 East Yan'an Road
Bund Center
Shanghai 200002 China
Tel: +86 21 6361 7731

Saint-Gobain Ceramic Materials GmbH Specialty Grains and Powders
Branch office
Concordiaplatz 351143
Köln Germany
Tel: +49 2203 956 468
Fax: +49 2203 956 421

cermatworcester@Saint-Gobain.com
www.abrasivematerials.saint-gobain.com

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