

CERPASS TGE®

CERPASS TGE® grain is a next-generation seeded gel product that offers the most extreme aspect ratio of any abrasive grain available. This is achieved by Saint-Gobain's globally patented grain extrusion technology. The unique combination of the nano-structure is composed of extremely uniform, sub-micron crystals, each one designed to fracture conchoidally when stressed. The high aspect ratio of the macrostructure allows for an extremely aggressive cutting ceramic grain, ideal in high material removal-rate 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	Extruded Rods	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	< 2,000	CaO	< 100
SiO ₂	< 700	Fe ₂ O ₃	< 200
Na ₂ O	< 100	MgO	< 150

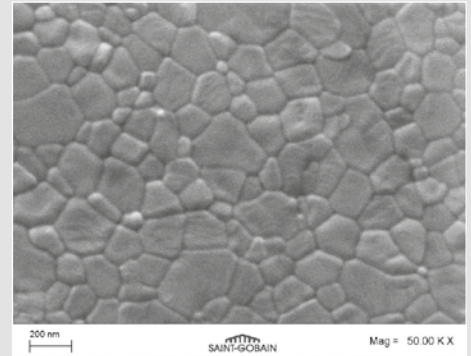
Product Availability: Macro-Sized Grains - Treated and Untreated

CERPASS® Code	Macro Grain Shape	Treatment	Sizing	Grit Sizes
TGE-0557	Extruded	Untreated	Modified Sizing (*)	20, 24, 36, 50, 70, 80, 100, 120

(*) Traditional sizing convention and distributions do not apply to TGE; a modified sizing method is applied. TGE grit size typically indicates the equivalent conventional crushed particle size.



Macrostructure of individual Extruded CERPASS TGE®-0557 grains.



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

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

LPD: Codes TGE-0577 - Extruded Grain Shape

LPD measured to American National Standards Institute (ANSI), ANSI B74.4-1992, Revision of ANSI B74.4-1977.

Traditional sizing convention and distributions do not apply to TGE and a modified sizing method is applied.

TGE grit size typically indicates the equivalent conventional crushed particle size. Aspect ratio controls the length with respect to the diameter of a TGE particle. Coarse Fraction is defined as twinned grits (and greater).

Grit Size	Lower Limit (g/cm ³)	Upper Limit (g/cm ³)	Aspect Ratio		Coarse Fraction (Max %)
			Mean	Standard Dev.	
20	1.86	2.06	1.5 - 3.5	0.2 - 0.8	5
24	1.85	2.05	1.5 - 3.5	0.2 - 0.8	5
36	1.80	2.00	2.9 - 4.5	0.7 - 1.3	5
50	1.79	1.99	3.1 - 4.9	0.7 - 1.3	10
70	1.84	2.04	3.3 - 5.1	0.7 - 1.3	10
80	1.70	1.90	3.3 - 5.1	0.7 - 1.3	10
100	1.71	1.91	3.3 - 5.1	0.7 - 1.3	10
120	1.72	1.92	3.3 - 5.1	0.7 - 1.3	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 Ceramic Materials GmbH Specialty Grains and Powders

Branch office
Concordiaplatz 3
51143 Köln
Germany
Tel: +49 2203 956 468
Fax: +49 2203 956 421

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

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CGN2016-08-01
SG-SGP-09_E01

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