

mNZP® is an enhanced zirconia alumina grain composed of a true abrasive alloy containing approximately 45%Wt zirconia produced by a special fusion process. Fused in an electric arc furnace at approximately 2000°C, this process develops a very small crystal size and unique columnar eutectic microstructures. The special chemistry and microstructure produces a hard, very tough and aggressively shaped abrasive grain. These features dramatically improve rapid stock removal operations and significantly enhance product life.

mNZP® 1584/1597 is available in a wide range of sizes and has unique performance and efficiency on coated abrasive applications.

Physical Properties (Typical)

Crystal Size	12 microns	Melting Point	1890°C
True Density	4.80 gms/cc	Vickers Hardness	19 GPA for 50 gram load
Loose Pack Density	1.90-2.30 gms/cc	-	-

Chemical Properties (Typical)

Al ₂ O ₃	54%	ZrO ₂	45%	TiO ₂	0.15%
SiO ₂	0.05%	Fe ₂ O ₃	0.07%	Na ₂ O	0.03%
CaO	0.10%	MgO	0.02%	-	-

Loose Pack Density (LPD) Limits*

Size	1584/1597 LPD Max. (g/cm ³)	Size	1584/1597 LPD Max. (g/cm ³)
20	2.22	80	1.97
24	2.16	100	1.92
30	2.16	120	1.93
36	2.14	150	1.93
40	2.06	180	1.93
50	1.97	220	1.90
60	1.95	-	-



Macrostructure of mNZP® grains



Microstructure of mNZP® grains (SEM)

Application

Code	Treatment	Grain Shape	Sizing Convention	Grit Size	Application
1584	Untreated	Weak	Modified FEPA P	P20-P220	Coated
1597	Treated	Weak	Modified FEPA P	P20-P220	Coated

Sizing Convention and Specifications *

Grits Size	Oversize	Coarse Grit	1 st Nominal	2 nd Nominal	Fines	Pan
	1	2	2+3	2+3+4	2+3+4+5	-5
P20	+12	+16	+16+18	+16+18+20	+16+18+20+25	-25
	0	0-7	34-50	80-92	96+	0-4
P24	+14	+18	+18+20	+18+20+25	+18+20+25+30	-30
	0	0-1	10-18	52-70	92+	0-8
P30	+16	+20	+20+25	+20+25+30	+20+25+30+35	-35
	0	0-1	10-18	52-70	92+	0-8
36T	+18	+25	+25+30	+25+30+35	+25+30+35+40	-40
	0	0-5	14-28	58-76	90+	0-10
40T	+25	+35	+35+40	+35+40+45	+35+40+45+50	-50
	0	4-15	48-73	85-97	95+	0-5
40SP	+18	+30	+30+35	+30+35+40	+30+35+40+50	-50
	0	5-20	35-50	60-75	90+	0-10
50T	+30	+40	+40+45	+40+45+50	+40+45+50+60	-60
	0	3-10	36-52	80-92	94+	0-6
60T	+35	+45	+45+50	+45+50+60	+45+50+60+70	-70
	0	0-7	15-35	56-74	92+	0-8
80T	+45	+60	+60+70	+60+70+80	+60+70+80+100	-100
	0	0-7	15-35	56-74	92+	0-8
P100	+50	+70	+70+80	+70+80+100	+70+80+100+120	-120
	0	0-1	10-18	52-70	92+	0-8
P120	+70	+100	+100+120	+100+120+140	+100+120+140+170	-170
	0	0-7	34-50	80-92	96+	0-4
P150	+80	+120	+120+140	+120+140+170	+120+140+170+200	-200
	0	0-3	20-32	66-84	96+	0-4
P180	+100	+140	+140+170	+140+170+200	+140+170+200+230	-230
	0	0-2	10-20	50-74	90+	0-10
P220	+120	+170	+170+200	+170+200+230	+170+200+230+270	-270
	0	0-2	10-20	50-74	90+	0-10

*Modified FEPA P

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
Gaocheng Town, Dengfeng
Zhengzhou, China
Tel: +86 400 888 0198