

AZ40

FOR BONDED ABRASIVES

CODE : 1564/1578

Description

AZ40 1564/1578 - Special eutectic alloy containing about 40Wt% Zirconia produced by fusing Zirconia and Alumina at about 1900°C in electric arc furnace. This specific process develops a very small crystal size and unique columnar eutectic microstructures, generating high self-dressing ability, outperforming cutting/grinding efficiency on bonded abrasive. Zirconia participant as well as the special microstructures provides high toughness to abrasive grains, which show great lifetime.

Physical Properties: (Typical)

Crystal Size	12 microns	Melting Point	1890°C
Specific Gravity (g/cm ³)	4.60	Loose Packed Density (g/cm ³)	1.97-2.35
Vickers Hardness	19 GPA for 50 gram load		

Chemical Properties: (Typical)

Al ₂ O ₃	60.0%	ZrO ₂	39.0%
TiO ₂	0.15%	SiO ₂	0.10%
Fe ₂ O ₃	0.15%	Na ₂ O	0.03%
CaO	0.09%	MgO	0.02%
Y ₂ O ₃	0.65%	-	-

Application

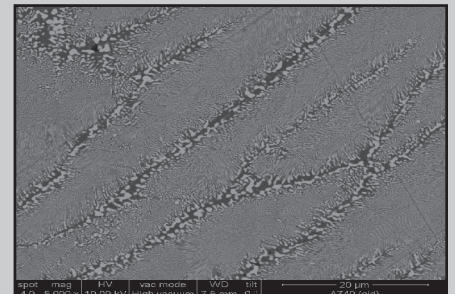
Code	Grain Shape	Treatment	Sizing Convention	Grit Size	Application
1564	Strong	Untreated	Modified ANSI	F8-F220	Bonded
1578		Treated			

Packing Term

25 KG / Paper bag



Macrostructure of AZ-40 grains



Microstructure of AZ-40 grains (SEM)

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Partical Size Distribution*& Loose Packed Density Specification

Grit Size	Oversize	Coarse Size	1 st Nominal	2 nd Nominal	Fine Grain	LPD (g/cm ³)	
	Test Sieve 1	Test Sieve 2	Test Sieve 3	Test Sieve 3&4		1564	1578
F8	+5/0	+7/(0-20)	+8/45+	(+8+10)/70+	-12/(0-3)	-	-
F10	+6/0	+8/(0-20)	+10/45+	(+10+12)/70+	-14/(0-3)	-	-
F12	+7/0	+10/(0-20)	+12/45+	(+12+14)/70+	-16/(0-3)	2.185-2.305	2.225-2.345
F14	+8/0	+12/(10-35)	+14/(30-60)	(+14+16)/55+	-18/(0-3)	2.165-2.285	2.205-2.325
F16	+10/0	+14/(1-20)	+16/(25-55)	(+16+18)/55+	-20/(0-6)	2.115-2.235	2.155-2.275
F20	+12/0	+16/(0-20)	+18/(20-50)	(+18+20)/60+	-25/(0-10)	2.100-2.220	2.140-2.260
F24	+16/0	+20/(15-40)	+25/(35-65)	(+25+30)/55+	-35/(0-3)	2.095-2.215	2.135-2.255
F30	+18/0	+25/(10-35)	+30/40+	(+30+35)/55+	-40/(0-3)	2.030-2.150	2.070-2.190
F36	+20/0	+30/(0-25)	+35/45+	(+35+40)/65+	-45/(0-3)	1.970-2.090	2.010-2.130
F46	+30/0	+40/(0-30)	+45/40+	(+45+50)/65+	-60/(0-3)	-	-
F54	+35/0	+45/(0-30)	+50/40+	(+50+60)/65+	-70/(0-3)	-	-
F60	+40/0	+50/(0-30)	+60/40+	(+60+70)/65+	-80/(0-3)	-	-
F70	+45/0	+60/(0-25)	+70/40+	(+70+80)/65+	-100/(0-3)	-	-
F80	+50/0	+70/(0-25)	+80/40+	(+80+100)/65+	-120/(0-3)	-	-
F90	+60/0	+80/(0-20)	+100/40+	(+100+120)/65+	-140/(0-3)	-	-
F100	+70/0	+100/(0-20)	+120/40+	(+120+140)/65+	-200/(0-3)	-	-
F120	+80/0	+120/(0-20)	+140/40+	(+120+170)/65+	-230/(0-3)	-	-
F150	+100/0	+140/(0-15)	(+170+200)/40+	(+170+200+230)/65+	-325/(0-3)	-	-
F180	+120/0	+170/(0-15)	(+200+230)/40+	(+200+230+270)/65+	-	-	-
F220	+140/0	+200/(0-15)	(+230+270)/40+	(+200+270+325)/65+	-	-	-

*Modified ANSI

Saint-Gobain Ceramic Materials (Zhengzhou) Co., Ltd
 Yangcheng Industrial Zone, Dengfeng,
 Zhengzhou 452477, China
 Tel: +86 21 6361 7731
<http://www.saint-gobain-zz.com.cn>

