

FUSED ALUMINA ZIRCONIA – AZ40

Overview

AZ40 represents a Fused Alumina-Zirconia type of eutectic composition produced by melting alumina and Zirconia at about 2000 °C temperature in an electric arc furnace followed by cooling of the molten product. The very fine and homogenous microstructure of this material provides high toughness but also excellent self-sharpening properties. With 40% zirconia, this product promises lasting durability for coated and bonded abrasives.

AZ40-F grade products are specifically engineered for bonded abrasives. From rough, organic-bonded abrasives to precise, vitrified-bonded abrasives, JYS offers a wide range of products that can be customized to suit various needs. AZ40-F Grade products vow to increase material removal rates and to extend usability without sacrificing beautiful finishes.

AZ40-P grade products are specifically engineered for coated abrasives. While traditional abrasives dull or break at the bonding point, JYS's AZ40-P Grade abrasives have unique fracture properties that offer microscopic precision in performance and efficient ability in high speed cutting action. These grains do not only improve the overall cutting experience, but they also extend the usability of your sandpapers, belts, or flap discs.

Characteristics

Structure	Absolute density	Knoop hardness	Melting point	Color
a- Al_2O_3 , m. t – ZrO_2	4.65 g/cm ³	1620 kg/mm ²	1880°C	Grey

Chemical Analysis

Al_2O_3	ZrO_2	SiO_2	Fe_2O_3	Na_2O
59%	40%	0.10%	0.20%	0.08%

AZ40-F Bulk Density(g/cm3)

F12	F14	F16	F20	F24
2.22-2.36	2.20-2.34	2.15-2.29	2.12-2.26	2.10-2.24
F30	F36	F46	F60	F80
2.05-2.19	2.00-2.14	1.96-2.10	1.91-2.05	1.89-2.03
F100	F120	F150	F180	F220
1.88-2.02	1.88-2.02	1.88-2.02	1.88-2.02	1.88-2.02

AZ40-P Bulk Density(g/cm3)

P20	P24	P30	P36	P40
0 - 2.25	0 - 2.20	0 - 2.20	0 - 2.20	0 - 2.10
P50	P60	P80	P100	P120
0 - 2.10	0 - 2.00	0 - 2.00	0 - 1.93	0 - 1.93
P150	P180	P220		
0 - 1.93	0 - 1.93	0 - 1.93		

Typical Application

AZ40 F-grade

Bonded Abrasives

- Cutting stainless steel
- Cutting high alloys steel types
- high pressure rough grinding and snagging
- snagging of alloyed steel castings
- Large diameter cut off wheels
- Steel Conditioning
- ID & OD Grinding
- Centerless Grinding
- Disc Grinding
- Segments
- Track Grinding

AZ40 P-grade

Coated Abrasives

- Sanding of stainless steel types (e.g. Cr-Ni steel)
- Machining of high alloyed steel types under heavy duty conditions
- Sanding of parquet floors
- Belts
- Flap disc
- Vulcanized fiber discs

AZ40-F grade Grain sizes

Grain	Sieve 1		Sieve 2		Sieve 3		Sieve 3 + Sieve 4		Sieve 5	
	Mesh	%	Mesh	%	Mesh	%	Mesh	%	Mesh	%
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
F14	+8	0	+12	10-35	+14	30-60	+14+16	55+	-18	0-3
F16	+10	0	+14	1-20	+16	25-55	+16+18	55+	-20	0-6
F20	+12	0	+16	0-20	+18	20-50	+18+20	60+	-25	0-10
F24	+16	0	+20	15-40	+25	35-65	+25+30	55+	-35	0-3
F30	+18	0	+25	10-35	+30	40+	+30+35	55+	-40	0-3
F36	+20	0	+30	0-25	+35	45+	+35+40	65+	-45	0-3
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+	+140+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+	-	-
F240	+170	0	+200	0-5	+230+270	8+	+230+270+325	38+	-	-

AZ40-P grade Grain sizes

Grain	Oversize		Coarse Grit		1st Nominal		2nd Nominal		Fines		Pan
Size	Mesh	%	Mesh	%	Mesh	%	Mesh	%	Mesh	%	%
P20	+12	0	+16	0-7	+16+18	34-50	+16+18+20	80-92	+16+18+20+25	96+	0-4
P24	+14	0	+18	0-1	+18+20	10-18	+18+20+25	52-70	+18+20+25+30	92+	0-8
P30	+16	0	+20	0-1	+20+25	10-18	+20+25+30	52-70	+20+25+30+35	92+	0-8
P36	+18	0	+25	0-5	+25+30	14-28	+25+30+35	58-76	+25+30+35+40	90+	0-10
P40	+25	0	+35	4-15	+35+40	48-73	+35+40+45	85-97	+35+40+45+50	95+	0-5
P50	+30	0	+40	3-10	+40+45	36-52	+40+45+50	80-92	+40+45+50+60	94+	0-6
P60	+35	0	+45	0-7	+45+50	15-35	+45+50+60	56-74	+45+50+60+70	92+	0-8
P80	+45	0	+60	0-7	+60+70	15-35	+60+70+80	56-74	+60+70+80+100	92+	0-8
P100	+50	0	+70	0-1	+70+80	10-18	+70+80+100	52-70	+70+80+100+120	92+	0-8
P120	+70	0	+100	0-7	+100+120	34-50	+100+120+140	80-92	+100+120+140+170	96+	0-4
P150	+80	0	+120	0-3	+120+140	20-32	+120+140+170	66-84	+120+140+170+200	96+	0-4
P180	+100	0	+140	0-2	+140+170	10-20	+140+170+200	50-74	+140+170+200+230	90+	0-10
P220	+120	0	+170	0-2	+170+200	10-20	+170+200+230	50-74	+170+200+230+270	90+	0-10