



Mill Mates® Plus Dispersion Media Ceria Stabilized TZP

Evolution in mill design and milling and dispersion requirements of higher viscosity formulations demand a superior media. Mill Mates Plus from CB Mills is engineered to satisfy these needs. Formulations up to 50,000 cps are routinely processed with efficiency.

Highly Engineered Performance

Mill Mates Plus is based on Tetragonal Zirconia Polycrystals (TZP). The superior microstructure of this material produces a finer grain of more uniform size. These properties make possible a dispersion media with a higher fracture toughness, density, and hardness.

Compared to the closest competing product(s), Mill Mates Plus lasts longer. Using Mill Mates Plus reduces mill wear and lessens down time for maintenance, while it speeds processing time.

For a Wide Range of Formulation

Mill Mates Plus with its engineered microstructure, results in a bead that is extremely round, tough, fracture and wear resistant, and dense. Mill Mates Plus is highly polished, resulting in very low friction and abrasive qualities. Industries benefiting from these qualities include:

- Automotive and Allied Paints, Inks, Dyes, and Pigments
- Frits, Glazes, and Ceramic
- Magnetic Materials, Coatings, and Dielectrics
- Foodstuffs, Pharmaceuticals, Cosmetics, and Toiletries



Optimizing Mill Mates Plus Mill Performance

Based on sieve analysis of nominal sizes, Mill Mates Plus delivers a tighter size distribution than the closest competing product. This means more shear is available during processing.

To achieve optimum performance, bead surface area (a characteristic of bead size), together with agitation speed and throughput, must be balanced to the formulation.

Your Dispersion Requirements

Mill Mates Plus - The ultimate in Ceria Stabilized TZP technology. Proprietary formulation allows for a finer, better controlled microstructure, and provides extreme wear-resistance, lower mill wear, and increased milling efficiencies. The best dispersion value for your most demanding needs.

Features:

Tetragonal Zirconia Polycrystal (TZP)
Controlled, consistent microstructure

Excellent roundness and size distribution control

Smooth Surface
High Density

Benefits:

- Extremely wear resistant, low contamination
- Predictable media performance, favorable hardness and toughness combination
- Maximum shear for increased efficiency in horizontal milling
- Low mill wear, easily washed between formulations
- Maximum throughput in recirculation grinding

Mill Mates / Mill Mates Plus are registered trademarks of Zircoa, Inc.

For additional information, or to place an order, please contact us.



DIVISION OF
**CHICAGO BOILER
COMPANY** SINCE 1891

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Mill Mates® Plus Dispersion Media Specs / Price List



Mechanical Properties

Property	Units	Mill Mates Plus
Size	--	1 mm
Composition	--	(Ce-TZP)
Density	g/cm ³	6.25
Hardness (HV)	Kgf/mm ²	1059
Fracture		
Toughness, K _{1c}	Mpa/m ^{1/2}	8.3
Elongation	--	0.96
Crush Strength	lbs. force	149
Wear Rate*		
Bead	%	0.1
Impeller	%	0.01
Surface	--	Smooth, becoming highly polished with use

*1 hour under Hydraulic Packing

Calculating the Correct Amount of Mill Mates Media

Nominal Size*	Range (mm)	Packing Density	
		kgs/L	lbs/L
.7 mm	.6 - .85 mm	3.906	8.61
1.0 mm	.85 - 1.18 mm	3.938	8.68
1.5 mm	1.4 - 1.7 mm	4.028	8.88
2.0 mm	1.7 - 2.3 mm	4.063	8.96

*Other sizes available upon request

Part Number	Nominal Size - mm	Range (mm)	Packing Density	Price per Pound		
				50-950	1000-4950	5000-9950
CMTZP-0608	.7	0.6 - .85	8.61			
CMTZP-1000	1.0	.85 - 1.18	8.68			
CMTZP-1500	1.5	1.4 - 1.7	8.88			
CMTZP-2000	2.0	1.7 - 2.3	8.96			

Typical composition (wt %): ZrO₂ 80, CeO 20, SiO₂ <.3, CaO <.7, MgO <.2, Fe₂O₃ <.1, Al₂O₃ <.2, TiO₂ <.1

1. Freight: F.O.B. point of origin
2. Sizes can be combined for quantity discount
3. Blanket orders available / Consult CB Mills
4. Standard Packaging – 50 lb. Packages
5. Payment Terms: NET 30 with approved credit
6. Minimum order \$100.00
7. Prices subject to change without notice.

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