



SALEM Advanced Surfacing Materials  
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## MicrogritWCA / Aluminum Oxide-Alumina powder

WCA is an Alumina powder developed and introduced by Micro Abrasives Corporation in 1957.

WCA is known throughout the world for its unique particle shape, aspect ratio and size distribution. Each WCA particle is a discrete crystal of alumina having a purity of over 99%. The crystals have a smooth surface and a distinctive platelet shape with an aspect ratio of 5:1. Each WCA particle has an exceptional resistance to fracturing which gives it an unparalleled advantage over typical fused aluminum oxides.

WCA is manufactured in a time proven high tech process that offers performance, dependability and consistency. This hydraulic process offers one of the most repeatable lot to lot consistencies in the abrasive industry and has done so for almost 50 years.

### APPLICATIONS IN SURFACE FINISHING

Precision Optics	Optical Glass	Quartz Germanium
Piezo-Electronics	Semiconductor Materials	Gallium Arsenide
Precision Bearings	Buffing Compounds	Stainless Steels
Harden Steels	Minerals	Ferrous & Non ferrous Metals

### ADVANTAGES OF USING WCA IN SURFACE FINISHING

- *The platelet crystal shape* causes orientation parallel to the lap and the work surface; pressure is thereby distributed uniformly over a larger surface of the abrasives and work surface. **This allows for more stock removal and less subsurface damage as well as prolonged abrasive life.**
- *The aspect ratio* allows for the abrasive to vehicle ratio to be decreased from 50%-30% on typical fused aluminum oxide to 20% - 15% on WCA slurries, **thus reducing abrasive consumption by 50%.**
- *Uniform size and quality of particle integrity* **prevent random scratching or damage to the workpiece.**

Micro Abrasives offers a variety of different suspension treatments to prevent hard packing and provide different levels of suspension. Custom blends of suspension treatments can be made for special or unique applications. Premixed slurries are available upon request.

**Sympa Tec HELOS/KF- cumulative distribution size specifications for WCA**

Size	94% MIN	50%	3% MAX
WCA 1	0.21	1.77-2.25	6.23
WCA 2	-	2.09-2.77	-
WCA 3	0.25	2.97-3.85	9.52
WCA 5	0.54	3.72-4.74	11.40
WCA 9	1.36	5.60-6.75	13.47
WCA 12	1.90	7.05-8.50	17.60
WCA 15	3.96	9.06-11.13	21.36
WCA 20	4.76	12.40-14.66	30.11
WCA 25	7.37	16.92-20.60	41.00
WCA 30	10.30	23.67-27.45	52.77
WCA 40	13.65	31.70-37.60	62.30
WCA 50	16.12	42.81-52.50	102.00

**Physical Properties**

Major Phase	Alpha
Specific Gravity	3.95
Hardness (Knoop)	1,800 - 2,200
Hardness (Mohs)	9
Melting point C	2020
PH	7.5 - 11
L.O.I.	<.35
Particle shape	Disc-like
Color	White

**Typical Chemical Analysis**

Al <sub>2</sub> O <sub>3</sub>	99.20%
SiO <sub>2</sub>	0.03%
Na <sub>2</sub> O	0.6%
CaO	0.05%
Fe <sub>2</sub> O <sub>3</sub>	0.02%