

Each of UPI's **HASTILITE** polishing compounds, slurries & powders have been uniquely engineered for optimal stock removal and surface finish. While all are excellent performers across a wide range of speeds, pressures, and polishing media, each formulation has a highly individualized set of properties to meet very specific criteria.

- *Low to Sub-Angstrom Finishes*
- *Ability to Achieve Scratch Dig Down to 0/0*
- *Increased Yields*
- *Extremely High Purity*
- *Ability to Run at Variety of Concentrations*
- *Compatible with Wide Range of Pads, Pitch, & Synthetic Media*
- *Wide Range of Particle Sizes*

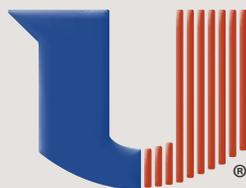


UNIVERSAL PHOTONICS extensive line of premium consumables and equipment bring the precision of semi-conductor technology to the optics industry.

Engineered to consistently deliver higher tolerances and yields, our products have been at the forefront of innovative polishing applications for nearly a century.

UNIVERSAL PHOTONICS specializes in total polishing systems, including polishes, pads & equipment. Our R&D team will work with you to develop a customized system for your unique application. All projects are treated with professional confidentiality.

For further technical information and sales inquiries, please contact our friendly customer service professionals or a UPI Field Applications Engineer.



**UNIVERSAL PHOTONICS
INCORPORATED**

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Hastilites/1119

THE HASTILITES™

**HIGH-PERFORMANCE
POLISHING COMPOUNDS
ENGINEERED FOR
PRECISION OPTICS**



CERIUM

HASTILITE FIN

Engineered for optimal performance on variety of precision optical glass: unrivaled surface finish, higher removal rate, faster process time, improved suspension, and easy cleanup. Proprietary processing ensures narrow, sub-micron, particle size range.

HASTILITE PO

Meets stringent optics fabrication specifications with 90% APS < 1.0 µm. High ceria-base yields sleek-free finishes on softer glass, while producing extremely low scatter surface on harder glass/ceramic materials.

HASTILITE PO ULTRA

This is "PO" further refined via proprietary technique, removing all impurities, yielding superb surface finishes.

HASTILITE 999

With 99%+ cerium oxide content, 999 is used where greatest purity is required. Over 95% APS < 1.0 µm.

HASTILITE PO-R1

Formula specs 90% APS < 1.0 µm. Unique high ceria content results in better surface finish on softer glass and low scatter on harder glass and ceramic materials.



CERIUM & RARE EARTH OXIDE

HASTILITE R

Uniform particle sizing, no suspension additives, and proprietary accelerator technology, yields high removal rates and superb surface finishes.

HASTILITE RS, RS1

Highly concentrated, rare earth oxide-based slurry, contains 50% solids to deliver high removal rates and excellent surface finish.

HASTILITE C

Processed cerium oxide slurry developed from a unique rare earth blend designed to offer aggressive stock removal rate yet provide angstrom-level finished surfaces.

HASTILITE CNR

Uniform particle sizing, no suspension additives, and proprietary accelerator technology, yields high removal rates and superb surface finishes.

HASTILITE SUPER PO

Rare earth oxides and additives specially processed to enhance settling and polishing characteristics.

Our **HASTILITE** polishes are the result of the most advanced design and engineering practices in polishing compound fabrication. Whatever your unique application, the variety of formulations in the **HASTILITE SERIES** assures state-of-the-art optic surfaces.

Product	pH	APS (µm)
HASTILITE FIN	8.50 - 9.50	0.30 - 0.40
HASTILITE PO	6.00 - 7.00	0.40 - 0.70
HASTILITE PO ULTRA	6.00 - 7.00	0.40 - 0.70
HASTILITE 999	5.00 - 6.00	0.40 - 0.60
HASTILITE PO-R1	6.00 - 7.00	0.40 - 0.70
HASTILITE R	5.00 - 6.00	0.60 - 1.60
HASTILITE RS, RS1	8.25 - 8.75	0.40 - 0.70
HASTILITE C	5.00 - 6.30	0.45 - 0.75
HASTILITE CNR	5.00 - 6.00	0.60 - 1.60
HASTILITE SUPER PO	6.00 - 7.00	0.40 - 0.70
HASTILITE POLYNANO	3.50 - 4.50 9.50 - 10.50	0.10, 0.15, 0.20, 0.30, 0.50 & 0.75*
HASTILITE DITRON	9.00 - 10.00	0.10 - 60.00*
HASTILITE POLYTRON	9.00 - 10.00	0.10 - 15.00*
HASTILITE ALPHA 3	12.20 - 12.50	0.14 - 0.25
HASTILITE 250	9.00 - 10.50	0.19 - 0.28
HASTILITE 300	9.00 - 10.50	0.15 - 0.25
HASTILITE 919	6.30 - 6.70	0.90 - 1.15
HASTILITE ZD	5.00 - 6.00	0.80 - 1.50
H-2000	5.50 - 7.50	0.40 - 0.70
HASTILITE NANO SiC 100	8.00 - 10.00	0.11 - 0.14

*Available particle sizes. Average particle size dependent on grade.

NANO ALUMINA

HASTILITE POLYNANO

Unique alpha-alumina composition of 100 - 300 nano-meter sized crystals, achieves highly polished finishes on broad range of ceramics and metals.

DIAMOND / ALUMINA BLEND

HASTILITE DITRON

Water-based, alpha-alumina and *monocrystalline* diamond slurry, economically produces superior surface finishes on hard materials.

HASTILITE POLYTRON

Water-based, alpha-alumina and *polycrystalline* diamond slurry delivers efficient polishing for hard materials at a fraction of the cost of diamond.

HASTILITE ALPHA 3

Aluminum oxide-based slurry designed for polishing C-Plane sapphire.

CERIUM/NANO POLYCRYSTALLINE ALUMINA

HASTILITE 250

Alpha-alumina crystals and rare earth minerals engineered for high resistance to particle breakdown, lengthening slurry life. Performs well with all types of pads and pitch.

HASTILITE 300

Intended for pad polishing of optics and glass.

CERIUM / ZIRCONIUM BLEND

HASTILITE 919

Advanced chemical compounding for hard-glass (e.g. BK-7 and fused silica), to yield surface roughness readings <1 angstrom.

HASTILITE ZD

Achieves lower surface roughness readings on Zerodur® compared to other conventional compounds.

H-2000

Acute chemical polishing action for rapid stock removal and angstrom level surface finish.

NANO SILICONE CARBIDE

HASTILITE NANO SiC 100

Aqueous, silicon-carbide slurry with crystal sizes 100 - 200 nanometers, maximizes cutting rates while minimizing subsurface damage.