



POLAR PERFORMANCE
MATERIALS





POLARGuard

Ultra-High Purity Alumina



Contact

 sales@polarpm.com

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Headquarters:

2860 Plymouth Drive, Oakville, ON
L6H 5R4, Canada



Pure Precision. Proven Performance.

Polar Performance Materials has engineered its POLARGuard™ ultra-high-purity alumina for the world's most exacting industries, including Semiconductor, Aerospace, Sapphire, and other high-performance sectors where quality is non-negotiable.

Our proprietary, energy-efficient process delivers alumina with precise particle size control, optimized surface area, and ultra-low impurities enabling maximum yield, process stability, and part performance for our customers.



POLARGuard

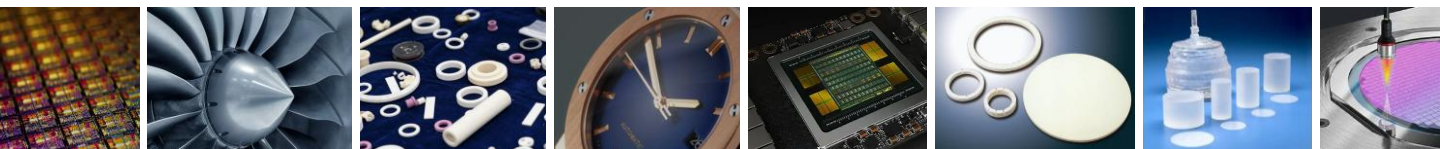
Categories	Engineered For	Benefits
PUREGuard™	Semiconductor	Uniform atomic-level coverage protection with zero compromise
TECHGuard™	Aerospace, Coatings, Medical, Li-Ion	Resilience in high-temp or harsh conditions
CRYSTALGuard™	Sapphire	Engineered for structural strength in demanding applications

Innovation, Purity, and Precision in Every Particle

- **Tailored Purity Levels:** Offering 4N and 5N to meet your industry needs, from semiconductors to technical ceramics.
- **Advanced Manufacturing:** Utilizing proprietary processing technology for unrivalled consistency and quality.
- **Customizable Solutions:** Adaptable properties and additives to fit your specific applications and improve processes.
- **Sustainable Practices:** Built upon an eco-friendly processes that significantly reduces carbon footprint.
- **Expert Support:** Dedicated technical support and R&D partnerships to optimize your part and process outcomes.

The Polar Advantage

- **Your Partner in Performance**
Tailored particle sizes and specific surface areas for critical processes.
- **Eco-efficient Manufacturing:**
Minimizing environmental impact while maximizing purity and quality.
- **Reliable Supply Chain:**
Proven logistics, backed by Polar's commitment to customer satisfaction.





POLARGuard Portfolio

PUREGuard™

UHPA

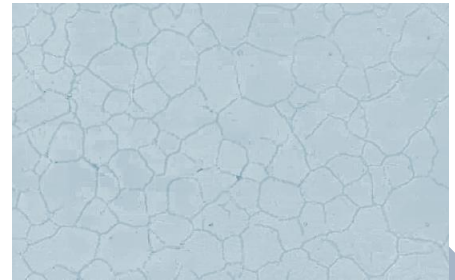
Product Code		Units	5065S	5045S	5170P	5120P
Purity			5N	5N	5N	5N
Crystal Phase			alpha	alpha	alpha	alpha
Morphology			spherical	spherical	irregular	irregular
BET Surface Area		m ² /g	6 - 10	6 - 10	4 - 7	4 - 7
PSD	D50	μm	0.55 - 0.8	0.3-0.55	1.4 - 2.0	1.0 - 1.4
Loose Density		g/cc	0.8-1.0	0.8-1.0	0.3-0.5	0.3 - 0.5
Impurities (Less than)	Na	ppmw	10	10	10	10
	Si	ppmw	8	8	8	8
	Fe	ppmw	5	5	5	5
	Ca	ppmw	5	5	5	5



TECHGuard™

UHPA

Product Code		Units	4065S	4045S	4170P	4120P
Purity			4N	4N	4N	4N
Crystal Phase			alpha	alpha	alpha	alpha
Morphology			spherical	spherical	irregular	irregular
BET Surface Area		m ² /g	6 - 10	6 - 10	4 - 7	4 - 7
PSD	D50	μm	0.55 - 0.8	0.3-0.55	1.4 - 2.0	1.0 - 1.4
Loose Density		g/cc	0.8-1.0	0.8-1.0	0.3-0.5	0.3 - 0.5
Impurities (Less than)	Na	ppmw	30	30	30	30
	Si	ppmw	12	12	12	12
	Fe	ppmw	10	10	10	10
	Ca	ppmw	8	8	8	8



CRYSTALGuard™

UHPA

Product Code		Units	5360Q	4360Q
Purity			5N	4N
Crystal Phase			alpha	alpha
Format			puck	puck
Average Fired Density		g/cc	>3.4	>3.4
Average Dimensions (L, W, H)		mm	59,59,39	59,59,39
Average Mass		g	450	450
Impurities (Less than)	Na	ppmw	5	30
	Si	ppmw	6	10
	Fe	ppmw	5	8
	Ca	ppmw	4	8

Customized specifications available

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Purity [ppmw]	Na	Mg	Si	Ca	Ti	Cu	Fe	K
4N [99.99%]	<30	<6	<12	<8	<5	<5	<10	<10
5N [99.999%]	<10	<3	<8	<5	<1	<2	<5	<5



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