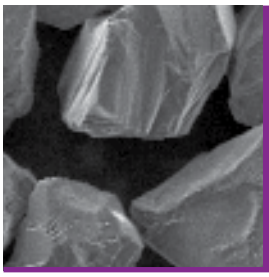
ENGINEERED PARTICLES / DIAMOND

Monocrystalline Micron Diamond

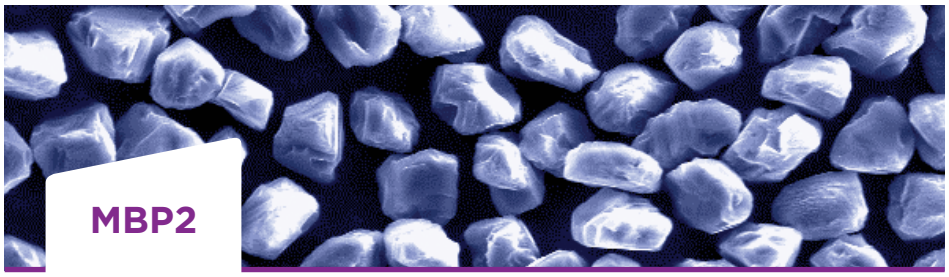
Saint-Gobain micron diamond is available in a full range of types, strengths, particle sizes, shapes and surface chemistries. For more than 50 years, the industry-leading Warren Superabrasives, brand has delivered the highest quality micron diamond specifically engineered to customer needs. In addition to our standard products, we make a large number of specialty products to customer specifications for dicing, slicing, sawing, cutting, grinding, lapping and polishing applications including nickel- and copper-coated micron products.

MBP

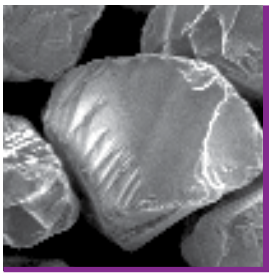


Application/Use:
- > PCD
- > Grinding
- > Lapping
- > Polishing

MBP is a premium, high purity, metal bond, monocrystalline synthetic diamond powder exclusively designed for the manufacture of Polycrystalline Diamond (PDC) cutting inserts. It has extremely low intrinsic and surface impurities due to rigid processing controls with conductivity below 1 micro Siemens. MBP is thermally stable with high impact resistance and can be used in many applications requiring these characteristics.

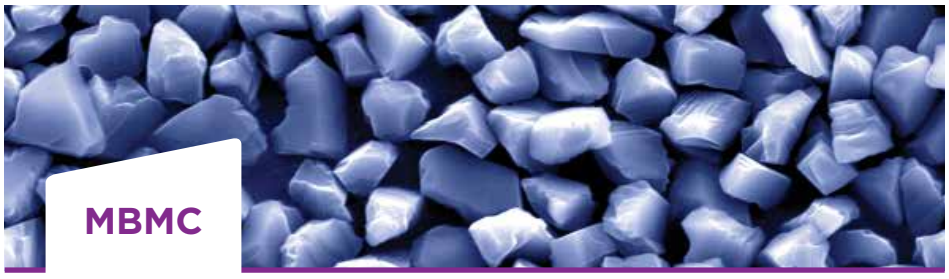


MBP2

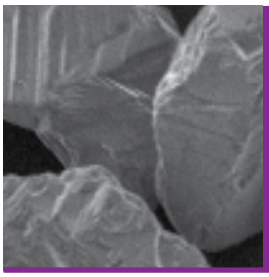


Application/Use:
- > PCD
- > Grinding
- > Lapping
- > Polishing

MBP2 is similar to MBP with the same tight controls on chemistry but it has slightly rounded particle edges that allow different packing densities. This diamond can be used as a sintering diamond for the fabrication of PDC cutting inserts and in applications calling for high strength particles where edge retention is critical.



MBMC



Application/Use:
- > Dicing
- > Slicing
- > Sawing
- > Cutting
- > Grinding
- > Lapping
- > Polishing

MBMC is the highest quality metal bond micron type available. Key applications include precision dicing, slicing, sawing, cutting, grinding, lapping and polishing where consistent particle shape and clean surfaces are required and cost is not the primary selection factor. Additional applications include high precision, electroplated and vitrified bonds particularly suited for electronics materials machining.

ISO CERTIFIED
9001:2008 and
14001:2004

ABC Superabrasives

WARREN Superabrasives

USA
1401 East Lackawanna Street
Mid-Valley Industrial Park
Olyphant, PA 18447
Tel: +1 570 383 3261 Fax: +1 570 383 3218

CHINA
No. 8, Xinkai Street
Econ. Dev. Zone 056107
Handan, Hebei, China
Tel: +86 310 806 6053 Fax: +86 310 806 6022

surfaceconditioning.saint-gobain.com

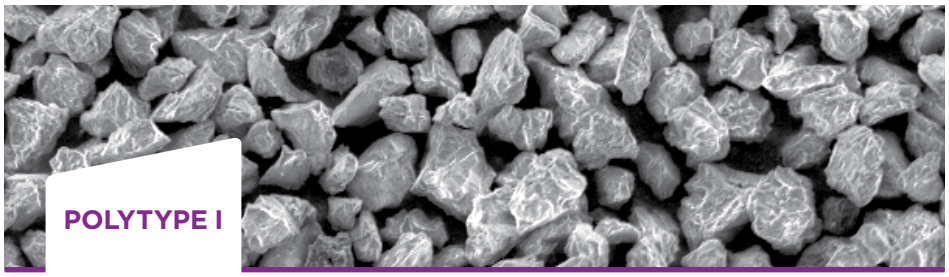
SURFACE CONDITIONING

SAINT-GOBAIN

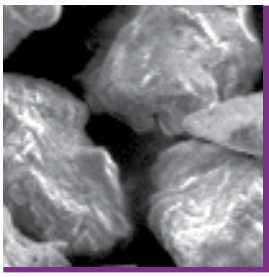
ENGINEERED PARTICLES / DIAMOND

Polycrystalline Micron Diamond

Polycrystalline Micron Diamond (PC) is formed by the explosive shock synthesis process as opposed to the cubic or belt press technology utilized in monocrystalline diamond synthesis. This more costly technique results in polycrystalline crystals which have more aggressive cutting properties than monocrystalline diamond. PC diamond is primarily used in engineered slurries for optical/electro-optical applications and in electronic materials lapping and polishing for productivity gains. It is often mixed with other abrasive materials to improve cut rate and/or finish.



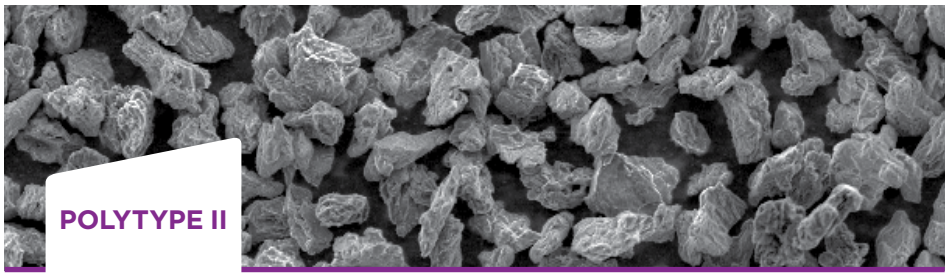
POLYTYPE I



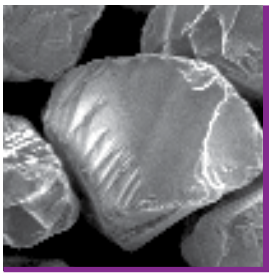
Lapping/Polishing:

- Sapphire, SiC & GaN LED Wafers
- Sapphire Watch Glass
- Glass
- Ceramics
- Optics/Electro-Optics

Poly Type I is a light-colored material that combines good material removal rate with the best economy. It produces excellent surface finishes on hard substrates due to its internal structure, which allows micro fracturing of particles to sizes smaller than the mean of the batch.



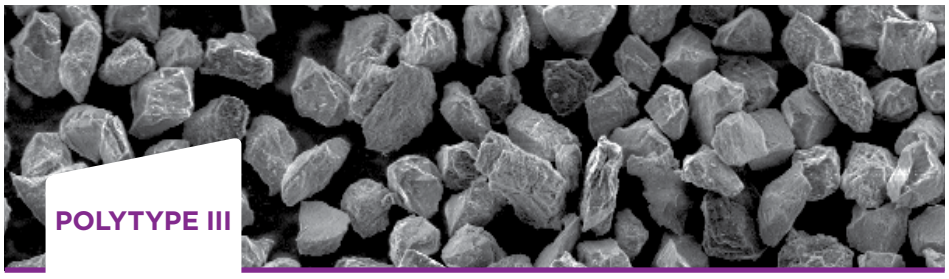
POLYTYPE II



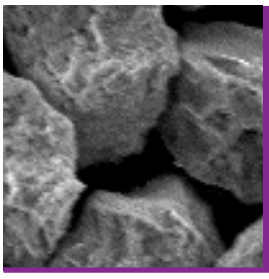
Lapping/Polishing:

- Sapphire, SiC & GaN LED Wafers
- Sapphire Watch Glass
- Glass
- Ceramics
- Optics/Electro-Optics

Poly Type II is a dark-colored material with a more irregular shape than Type I. It can provide the highest material removal rates because of its aggressive abrasiveness. Superior surface finishes are attainable when properly formulated in slurry applications. A wide range of sizes are available.



POLYTYPE III



Lapping/Polishing:

- Sapphire, SiC & GaN LED Wafers
  Sapphire Watch Glass
- Glass
- Ceramics
- Optics/Electro-Optics

Poly Type III is a medium-colored material that provides consistent material removal rates and surface finishes on a wide range of hard, brittle material applications. Its main advantage is excellent availability in a broad range of sizes.

ISO CERTIFIED
9001:2008 and
14001:2004

ABC Superabrasives

WARREN Superabrasives

USA
1401 East Lackawanna Street
Mid-Valley Industrial Park
Olyphant, PA 18447
Tel: +1 570 383 3261 Fax: +1 570 383 3218

CHINA
No. 8, Xinkai Street
Econ. Dev. Zone 056107
Handan, Hebei, China
Tel: +86 310 806 6053 Fax: +86 310 806 6022

surfaceconditioning.saint-gobain.com

SURFACE CONDITIONING

SAINT-GOBAIN

EFFect

DESCRIPTION

EFFect is a series of semi-synthetic, heavy-duty alumina polishing slurries designed for use on stainless steel, titanium, chrome and other ferrous and non-ferrous alloys. The EFFect products contain an emulsified mixture of grease and oil at an optimized concentration to provide excellent lubricating and cooling properties under demanding conditions. This allows the abrasive in EFFect slurries to be efficiently carried to the polishing zone, improving workpiece finishes and extending tool life. In addition, the emulsified greases and oils produce a protective film on metal parts, reducing potential for corrosion. Since the oils and greases are thoroughly emulsified, they are easy to clean off with water and mild detergents. EFFect slurries can be produced with a variety of alumina sizes to meet removal rate and surface finish targets.

TYPICAL PHYSICAL PROPERTIES

Appearance	White slurry
Specific gravity @ 20°C	1.08-1.24
LBS/gallon	8.97-10.34
pH	9.1
Abrasive concentrations	12-28%
Typical abrasive sizes	0.05µm - 12µm

RECOMMENDED PROCESS PARAMETERS

For metal polishing: EFFect should be without dilution. It is recommended that latex gloves be worn while working with EFFect to avoid the possibility of dermatitis.

AVAILABILITY

5-gallon pails, 2-gallon pails, 1 gallon bottles, 400ml containers

Features and benefits

- Chemical properties enhance surface finish and extend tool life
- Provides protection against corrosion on ferrous metals
- Non-foaming and does not contain silicone
- Forms protective films upon evaporation
- Alumina abrasive sizes range from 12-micron, for general metal polishing to 0.05-micron for metallographic applications
- Does not contain nitrites, sulfur, phenols, DEA, environmentally harmful or carcinogenic compounds
- Resistant to biological degradation

Saint-Gobain Surface Conditioning
4905 East Hunter Avenue, Anaheim, CA 92807 USA
Tel: +1 714-701-3900 **Fax**: +1 714-701-3912

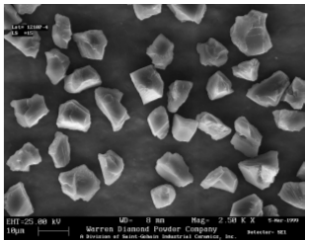
www.surfaceconditioning.saint-gobain.com

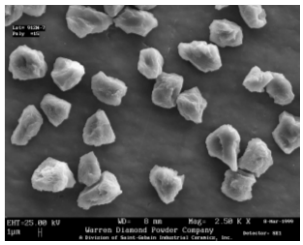
SAINT-GOBAIN

COMPOUNDS / METALS AND CERAMIC POLISHING

AMPLEX Superabrasives Diamond Compounds

Amplex compounds receive worldwide recognition in the lapping and polishing market for their high degree of consistency and reliability in performance. All compounds will shear thin and are made using highly refined and precision-graded superabrasive powders (diamond and CBN) that have high bulk purity, high surface purity, and well controlled impact strength crystals.





PRODUCT RANGE & AVAILABILITY

- Offer standard sizes ranging from 0.10 to 60 um, colored by size
- Standard, medium, and heavy abrasive concentrations
- 5g, 10g, and 25g plastic syringes
- Dilution thinners available upon request

MANUFACTURED AND CERTIFIED IN USA

- Product and lot certifications are available for each shipment
- All manufacturing in ISO 9001 and 14001 certified facility

RECOMMENDED APPLICATIONS

- Lapping and polishing of metallographic samples, tools, dies, bearings, seals, and other ceramic parts.

FEATURES AND BENEFITS

- Internally engineered diamond and cBN particles leading to quality and consistency
- Tight control of particle size distribution and oversized particles
- Formulation chemistry designed to ease dispensing and usage
- Knowledgeable application engineers available to answer questions

PRODUCT SPECIFICATIONS

	OS Compounds (Thick)	WS Compounds (Thick)	Crystal Compounds (Thin) *NEW FORMULA*
Recommended usage tips	Mirror finish on ceramic and crystal components (carbides and oxides).	Luster polish on metals and ceramics.	Pre-thinned and flowable for even film coverage and mirror finish on all surfaces.
	Use with Amplex OS Thinner and a solvent cleaner.	Use with Amplex WS Thinner. No solvent cleaning required.	Use without thinner or solvent cleaner.
Viscosity	4.4M cps	4.2M cps	0.4M cps

Saint-Gobain Surface Conditioning
4905 East Hunter Avenue, Anaheim, CA 92807
Tel: 714-701-3900 **Fax:** 714-701-3912

surfaceconditioning.saint-gobain.com/

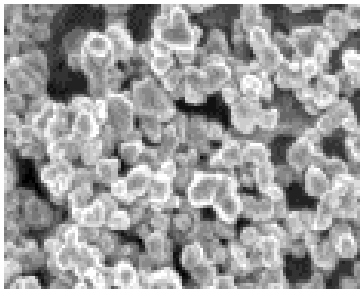
SAINT-GOBAIN

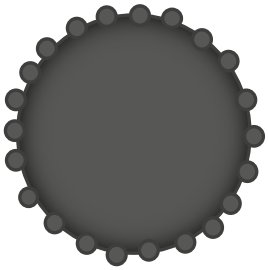
SURFACE CONDITIONING

SLURRIES / OXIDE POLISHING

SAINT GOBAIN Glass Polishing Slurries

Saint-Gobain Glass Polishing Slurries are a series of high precision CMP slurries specifically formulated for use on glass wafers. They utilize Saint-Gobain's proprietary zirconia particles and ceria particles that greatly enhance removal rates compared to other competitive abrasives. It is also formulated with proprietary chemistries which further enhance planarization efficiency. Saint-Gobain glass slurries also contain unique additives that provide excellent surface defectivity and cleanability. They have excellent slurry shelflife stability. These slurries have high colloidal and biological stability for enhanced ease of use.





FEATURES AND BENEFITS

- Internally engineered abrasive particles leading to unmatchable removal efficiency
- Tight control of particle size distribution and oversized particles
- Formulation chemistry designed to maxime CoO and improve cleanability
- Knowledgeable application engineers available to answer questions

PRODUCT RANGE & AVAILABILITY

• 1 gallon, 5 gallons and 55 gallons

MANUFACTURED AND CERTIFIED IN USA

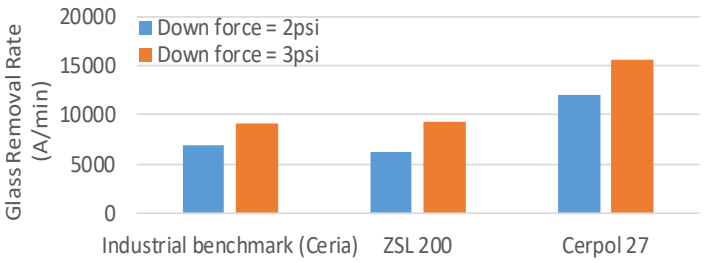
• Product and lot certifications are available for each shipment
• All manufacturing in ISO 9001 and 14001 certified facility

RECOMMENDED APPLICATIONS

• Electronic grade glass, quartz

PRODUCT SPECIFICATIONS

	ZSL 200	CERPOL 27
Abrasive type	Engineered Zirconia	Engineered Ceria
Particle size D50	180nm	600nm
Dilution ratio	5X-10X	2X-5X
pH	6	10
Solids content	10%	6%



Saint-Gobain Surface Conditioning
4905 East Hunter Avenue, Anaheim, CA 92807
Tel: 714-701-3900 Fax: 714-701-3912

surfaceconditioning.saint-gobain.com/

SAINT-GOBAIN