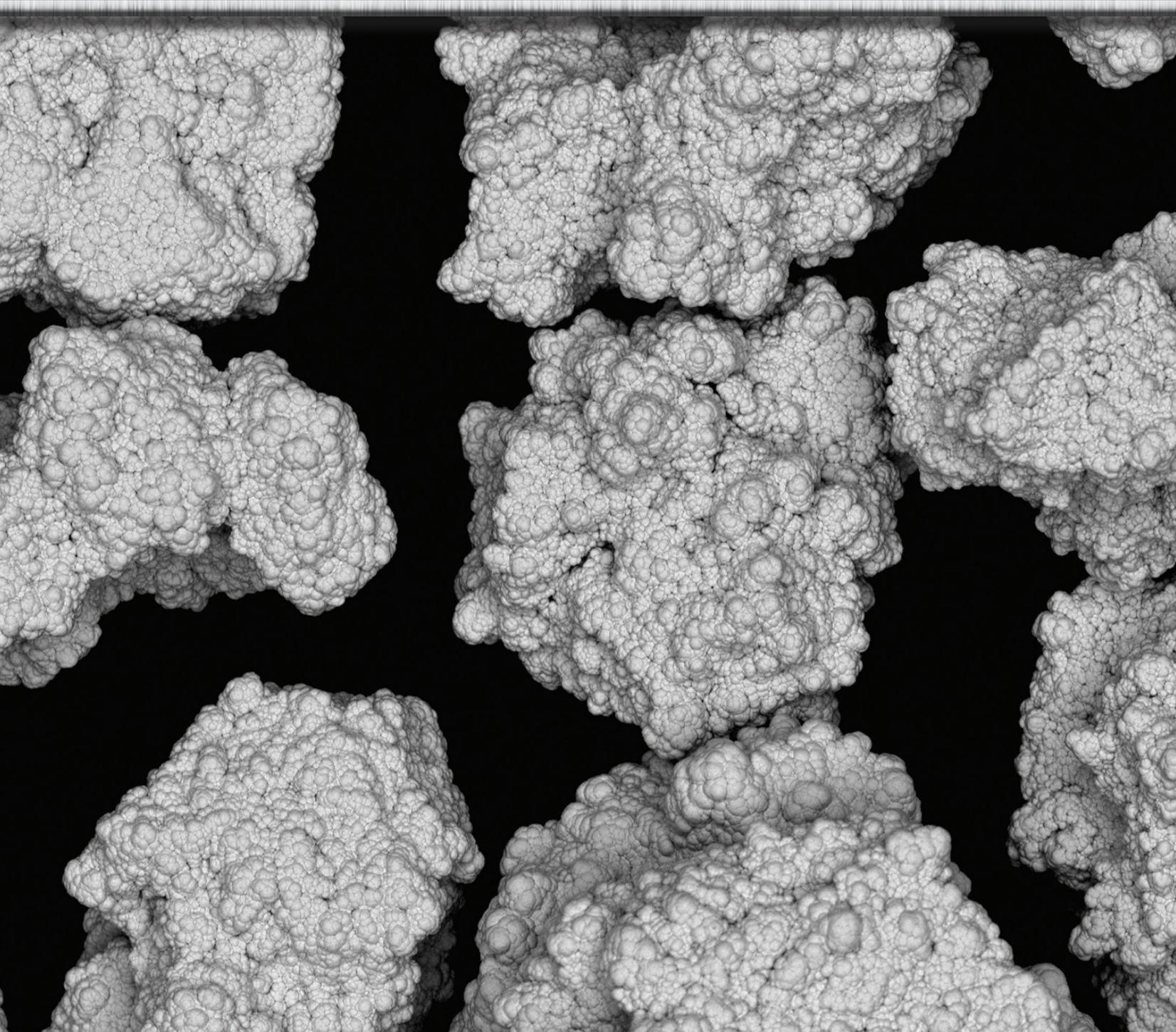


WWSA

WorldWide Superabrasives LLC

ISO 9001:2008 CERTIFIED

PRODUCT CATALOG



Our Vision

Worldwide Superabrasives, LLC (WWSA) was formed with a vision to provide our customers with highly competitive products from a non-competitive position relative to superabrasive end-users.

With over 125 years of combined experience in the superabrasives and electroless coating industries, WWSA provides customers with the support and expertise they expect.

Our commitment to quality plays an integral role in providing customers with consistent products for each shipment. We achieve this by utilizing industry leading analytical equipment and strict quality control procedures for each qualified lot.

WWSA works closely with customers to establish their superabrasive requirements, resulting in our customers receiving the most suitable products for their respective applications. This, along with WWSA's ability to manufacture superabrasive products at our 60,000 square foot manufacturing facility in Kaifeng, China, allows WWSA to ensure that our customers receive the best possible superabrasive products at the most competitive prices.

Our Core Values

Since our inception in 2004, WWSA has been governed by our core values. These values play a very important role in how WWSA operates in a very competitive superabrasive marketplace.

- PROVIDING THE HIGHEST QUALITY SUPERABRASIVE PRODUCTS
- ACTING WITH ABSOLUTE INTEGRITY
- COMMUNICATING OPENLY AND HONESTLY WITH OUR CUSTOMERS AND PARTNERS
- PROMOTING A HIGHLY MOTIVATED, VALUED AND DIVERSE WORKFORCE
- ACKNOWLEDGING AND RESPECTING OUR TEAM MEMBERS
- SIMPLIFYING AND CONTINUOUSLY IMPROVING OUR PROCESSES

WWSA and BESCO Joint Venture

WWSA purchased and completely renovated our 11,000 square foot state-of-the-art superabrasives manufacturing factory in 2010. Our multi-million-dollar commitment to design and build a custom superabrasives coating and processing facility in the US exemplifies WWSA's devotion to the future of the superabrasives industry.







All of WWSA's world-class coatings are applied at our Boynton Beach, Florida facility. Our ability to automate virtually all of our coating processes ensures our customers that they will receive consistent coatings with each shipment. WWSA's commitment to developing advanced new coatings will assist our customers by increasing tool life.

- WWSA and BESCO SUPERABRASIVES formed a joint-venture in 2008 to manufacture world-class superabrasive products in Kaifeng, China
- Our 60,000 square foot Kaifeng superabrasives manufacturing facility includes a new 25,000 square foot R&D and catalyst manufacturing center
- Manufacturing our own catalysts to ensure that WWSA controls all aspects of the superabrasives manufacturing process
- As a manufacturer of superabrasive materials, WWSA is in a position to develop new superabrasive solutions for end users around the world
- WWSA produces and micronizes all of our resin bond and CBN micron products utilizing industry leading techniques and analytical equipment at our Kaifeng facility







Quality Assurance Program

WWSA is an ISO 9001:2008 certified firm.

WWSA's quality control team members have a combined 50+ years of experience in the superabrasives industry.

All WWSA quality control verification equipment is calibrated on a regular basis.

WWSA maintains retention samples of all manufactured lots for 8 years to ensure product traceability.

All WWSA quality control testing conforms to ANSI and FEPA standards.

WWSA utilizes statistical process control to assess and maintain all testing results.

WWSA performs the following tests on all mesh products:

- Friability testing according to ANSI Standard B74.23.
- Size verification testing according to ANSI Standard B74.16.
- Micron size verification testing according to ANSI Standard B74.20.
- Shape consistency verification utilizing Diashape shape analysis software.
- Product cleanliness verification using IC, ICP and AA.



Customer Service

WWSA takes great pride providing industry leading customer service and technical support to over 100 customers in 20 countries around the world. WWSA received a 99% customer service satisfaction score in our most recent annual survey and we have not received a score of less than 97% since our inception in 2004.

CUSTOMER FOCUS

We work closely with our customers to determine the best possible superabrasive solution for each application.

CUSTOMER FEEDBACK

Responding in a timely manner is critical to the success of our customers.

SPECIAL REQUIREMENTS OF OUR CUSTOMERS

WWSA maintains extensive inventories of customized superabrasive products that are manufactured to satisfy our customer's specific requirements.

CUSTOMER PROPERTY

All WWSA team members completely understand that our relationship with each customer is based on mutual trust and confidentiality.

ON TIME DELIVERY

WWSA currently maintains an inventory of over 25,000,000 carats to ensure on-time delivery of our 125 superabrasive products. WWSA covers the cost of shipping our products to our customers—typically 2-3 day delivery.

CUSTOMER GRIEVANCES

While everyone at WWSA strives for a mistake-free environment, mistakes do happen. How WWSA responds to an issue distinguishes our customer service from our competitors. We view any issue that may arise as an opportunity to provide our customers with a timely, solutions based resolution.



Cubic Boron Nitride (cBN)

Cubic Boron Nitride (cBN) is second in hardness only to diamond.

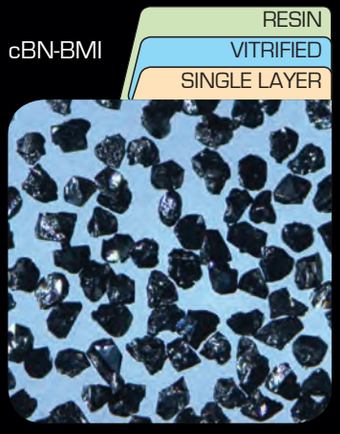
cBN exhibits a high abrasion resistance and thermal conductivity when compared to conventional abrasives such as Silicon Carbide and Aluminum Oxide.

The thermal integrity of cBN and its ability to maintain sharp cutting edges when machining ferrous materials make it the product of choice in advanced grinding systems.

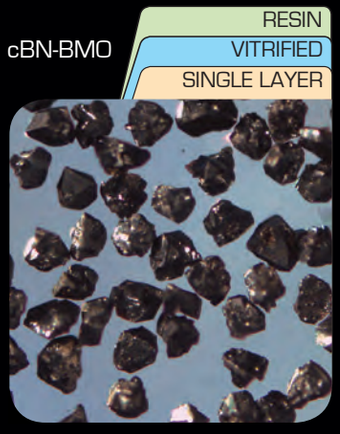
cBN-BMA



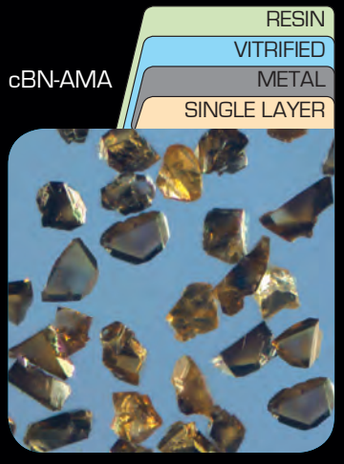
cBN-BMI



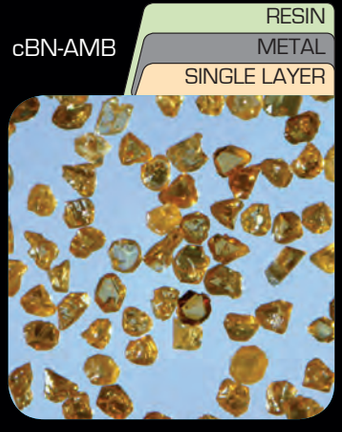
cBN-BMO



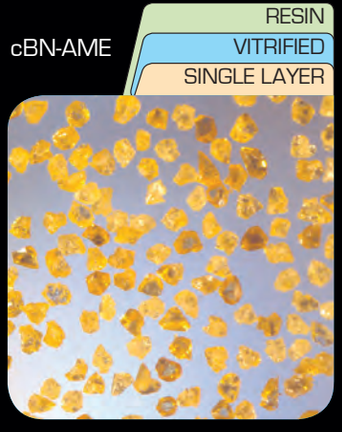
cBN-AMA



cBN-AMB



cBN-AME



cBN-BMA

Medium Friability
Angular Shape
Density 3.48 g/cm^3

Description

Black, medium strength, with an angular morphology and high thermal stability. The BMA's angular morphology produces a free cutting action that reduces heat generation and power consumption while increasing grinding efficiency.

cBN-BMI

Low Friability
Blocky Shape
Density 3.48 g/cm^3

Description

Black, medium strength, with a blocky morphology and high thermal stability. The BMI's blocky morphology provides a more controlled crystal fracture, allowing the tool to better maintain its form while generating smaller particles under impact.

cBN-BMO

High Friability
Semi Blocky Shape
Density 3.48 g/cm^3

Description

Black, friable, with an irregular shaped morphology. The BMO's semi blocky morphology produces controlled micro fracturing particles along with free cutting characteristics to enhance wheel life and surface finish.

cBN-AMA

Low Friability
Angular Shape
Density 3.48 g/cm^3

Description

Dark brown, very high strength, with an angular morphology and very high thermal stability. The AMA's tendency to macro-fracture under impact loading, coupled with its very high thermal stability provides longer wheel life.

cBN-AMB

Very Low Friability
Blocky Shape
Density 3.48 g/cm^3

Description

Golden in color, very high strength, with a blocky morphology and very high thermal stability. The AMB's micro-fracturing characteristics, very high thermal integrity and very high fracture strength produce an aggressive cutting action while retaining the crystal in the bond as long as possible.

cBN-AME

High Friability
Semi Blocky Shape
Density 3.48 g/cm^3

Description

Amber, friable, semi-blocky shape with an irregular crystal morphology. The AME's controlled free cutting characteristics and consistent fracture mode enhance wheel life and surface finish.

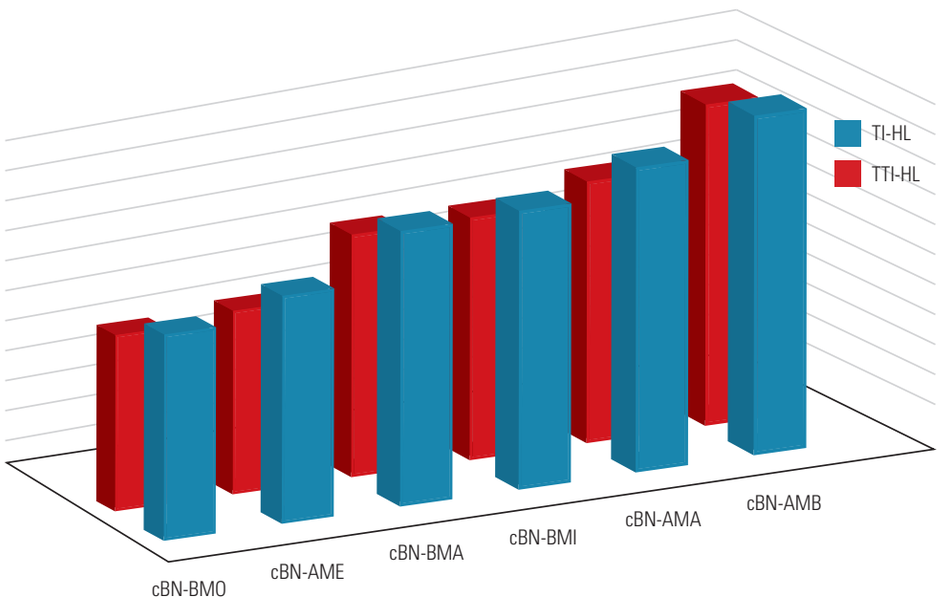
Resin Bond systems are widely used for all-purpose superabrasive grinding applications in either phenolic or polyimide bonds. Resin bond systems can be utilized in either wet or dry grinding operations and offer excellent particle retention and part finish.

Vitrified Bond systems are manufactured from ceramic materials that are strong, durable and brittle. Vitrified bonds are very effective in advanced grinding operations because of their ability to hold the abrasive and reduce heat generation in the grinding zone due to their high porosity levels when compared to other bond types.

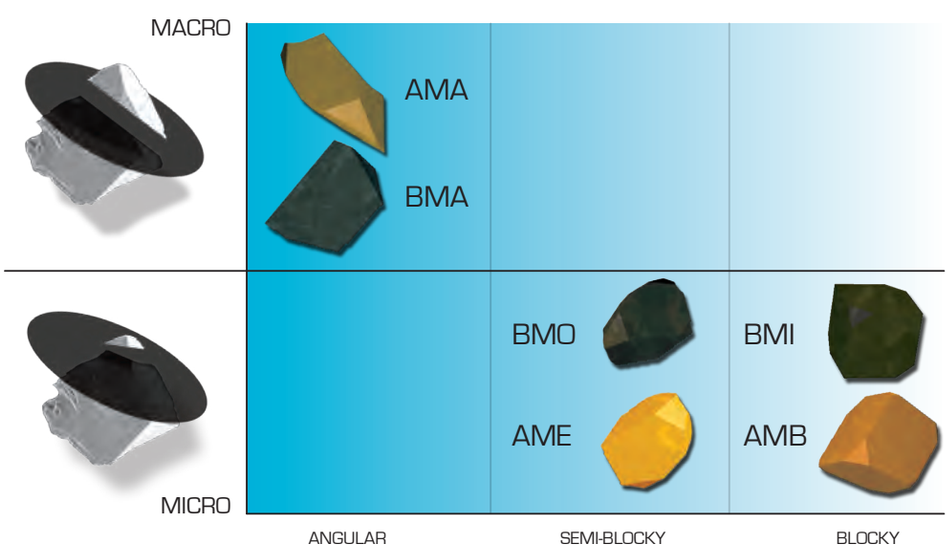
Metal Bond systems are the toughest formed bonds available and are recommended for wet grinding. Metal bonds exhibit high abrasive and heat resistance along with excellent form holding capabilities leading to extended tool life.

Single Layer Bond systems (electroplated and brazed) hold a single layer of superabrasive grains bonded to a precision machined form. Electroplated systems are bonded with a Nickel matrix and leave approximately 50% of the abrasive exposed while brazed systems leave approximately 80% of the abrasive exposed. Single layer bond systems typically do not require dressing.

TI-HL and TTI-HL Comparisons of cBN Series



Fracture Mode and Shape Comparisons of cBN Series



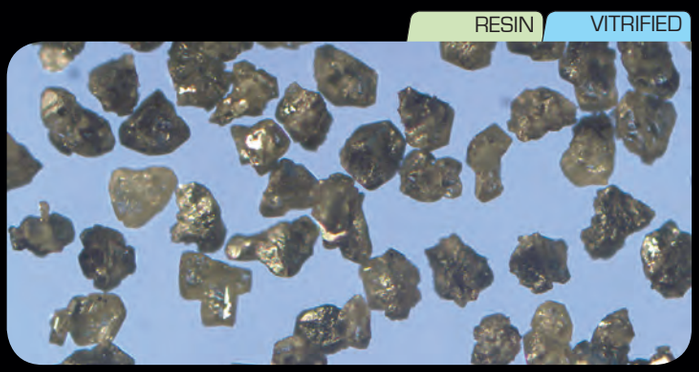
Resin Bond Mesh (RB)

Resin Bond diamond is recommended for vitrified bond and resin bond (phenolic and polyimide) systems.

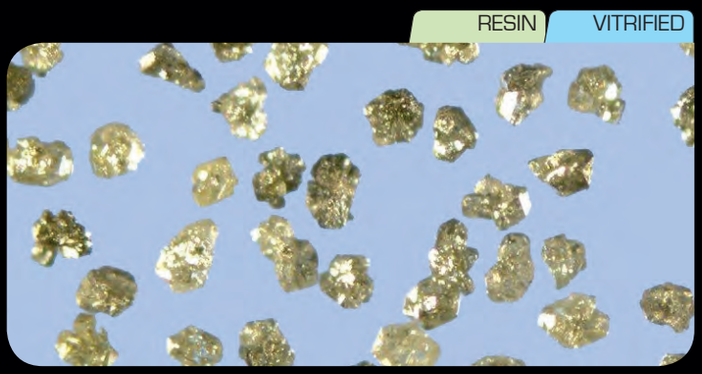
It's unique fracturing characteristic produces a free cutting action that provides optimal performance when machining nonferrous materials such as tungsten carbide, glass and a variety of ceramics.

Resin bond diamond clad with a metallic coating such as Nickel or Copper may provide additional tool life, as the metal coating improves heat dissipation and the enhanced coating texture improves particle retention in resin bond systems.

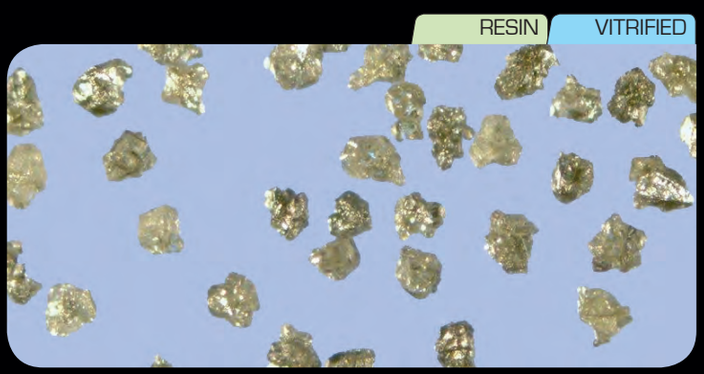
RB-50



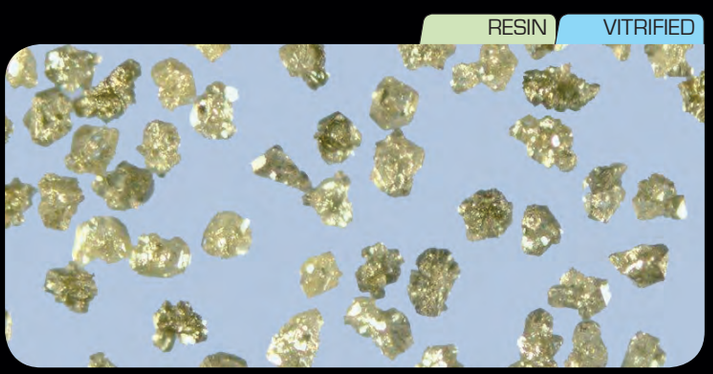
RB-100



RB-150



RB-200



RB-50

Very High Friability
Semi Blocky Shape
Density 3.52 g/cm^3

Description

Highest friability resin bond diamond particles with a crystal structure that promotes microfracturing. Effective for high precision grinding applications where surface finish is a critical factor.

RB-100

High Friability
Semi Blocky Shape
Density 3.52 g/cm^3

Description

Economy grade semi-blocky resin bond diamond that is slightly more friable than a standard resin bond diamond. RB-100's increased friability, coupled with its free cutting action, provides solid performance where cost is a key factor.

RB-150

Medium - High Friability
Semi Blocky Shape
Density 3.52 g/cm^3

Description

Standard grade blocky resin bond diamond. This medium friability crystal demonstrates an ability to self sharpen which produces a free cutting action that is critical in maintaining the balance between tool life and grinding performance.

RB-200

Low - Medium Friability
Semi Blocky Shape
Density 3.52 g/cm^3

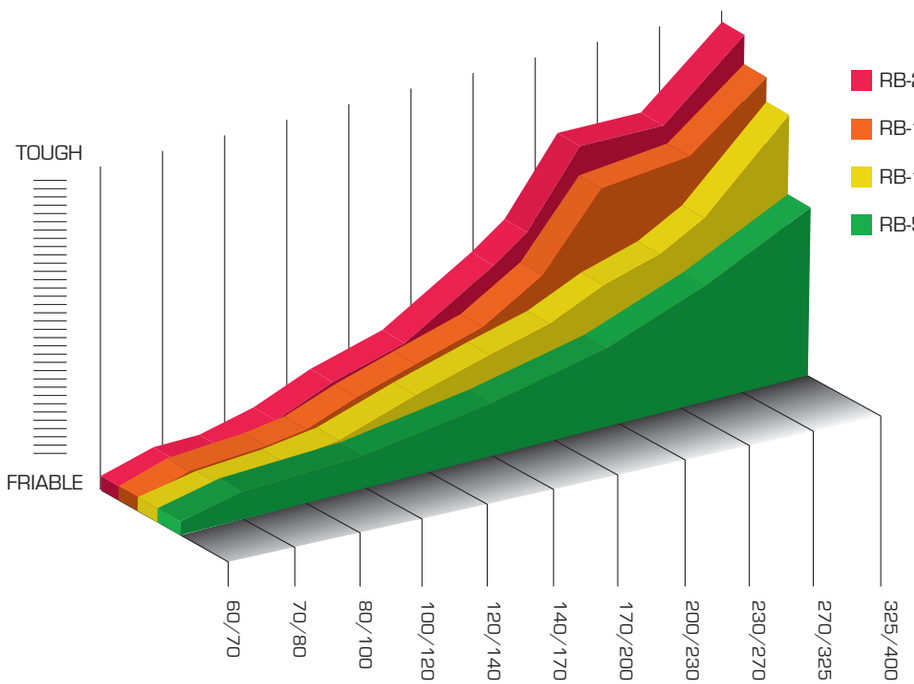
Description

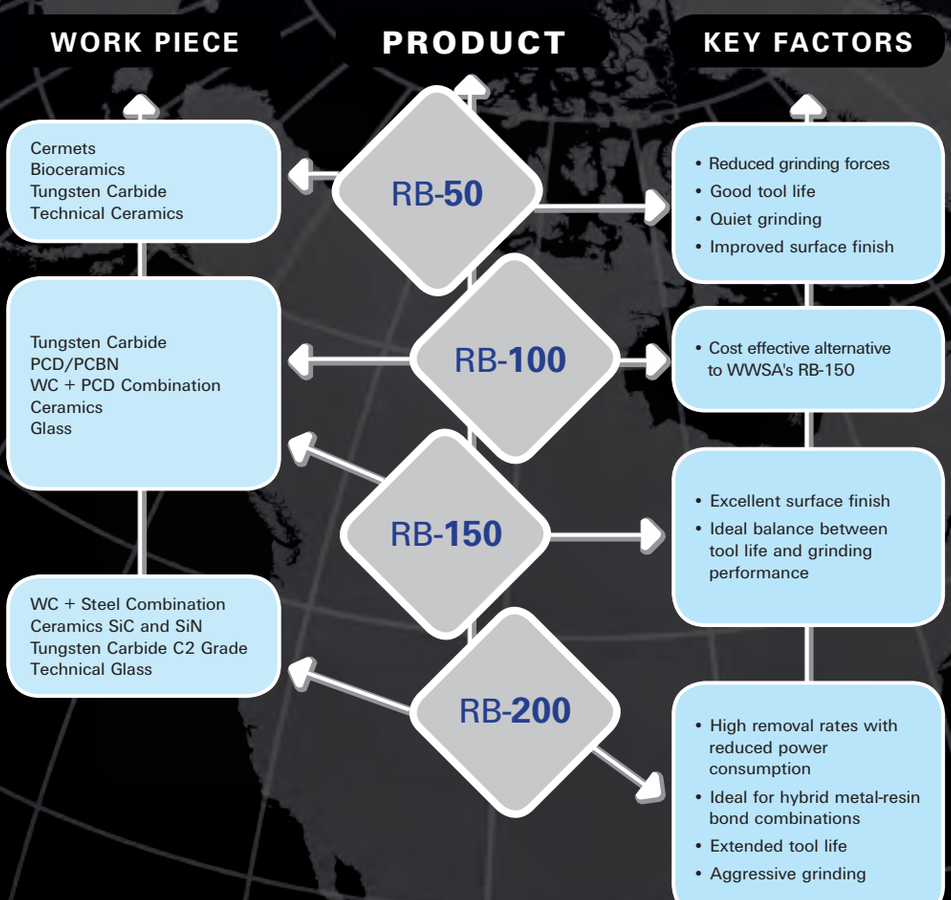
Premium grade blocky resin bond diamond that is the least friable in our family of resin bond diamond products. Controlled micro-fracturing produces a free cutting action while requiring more force per grain to generate new cutting edges vs. the RB-150.

Resin Bond systems are widely used for all-purpose superabrasive grinding applications in either phenolic or polyimide bonds. Resin bond systems can be utilized in either wet or dry grinding operations and offer excellent particle retention and part finish.

Vitrified Bond systems are manufactured from ceramic materials that are strong, durable and brittle. Vitrified bonds are very effective in advanced grinding operations because of their ability to hold the abrasive and reduce heat generation in the grinding zone due to their high porosity levels when compared to other bond types.

Friability Comparisons of RB Series





Metal Bond Mesh (non-crystalline)

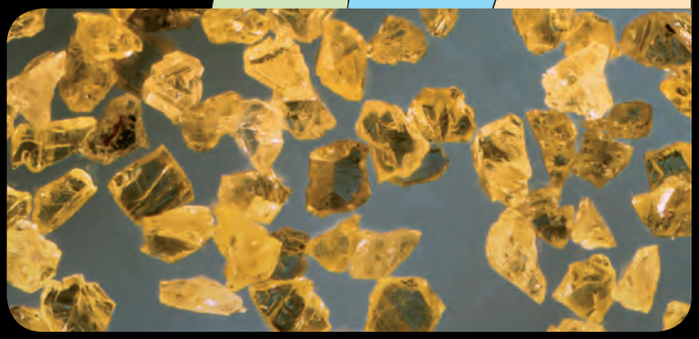
Our line of metal bond non-crystalline products are recommended for resin bond, vitrified bond, metal bond and electroplated bond systems where a more free cutting crystal is required.

These products require less force per grit to regenerate new cutting edges vs. our WWS-200, thus providing a free cutting material that requires less power when grinding.

Recommended for glass grinding, PCD/PCBN grinding and lapping, resin bond stone polishing tools and dental burrs.

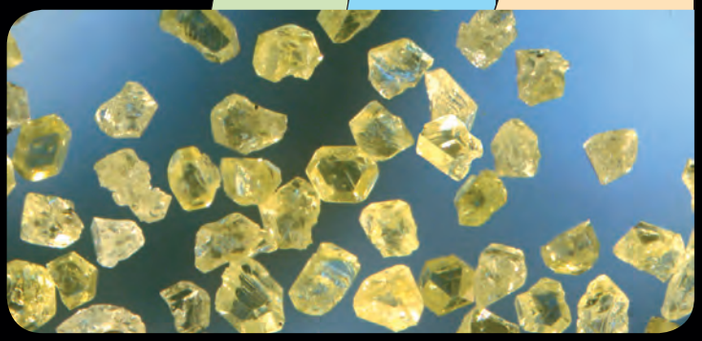
MB-100

RESIN | VITRIFIED | SINGLE LAYER



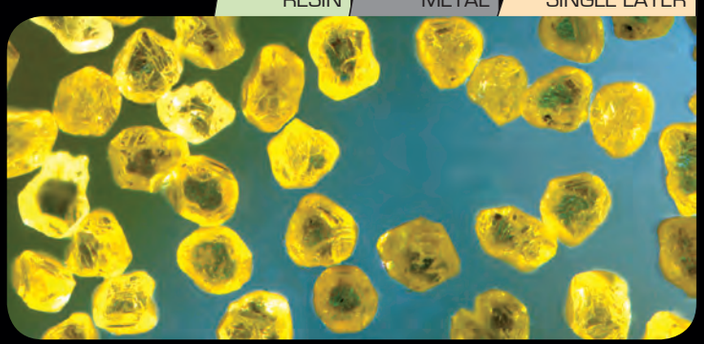
MB-150

RESIN | VITRIFIED | SINGLE LAYER



MB-200

RESIN | METAL | SINGLE LAYER



MB-100

Medium Friability
Angular Shape
Density 3.52 g/cm^3

Description

Friable, angular shaped crystal that rapidly regenerates new cutting edges with low grinding forces. Rough surface texture provides increased mechanical retention in most resin bond systems.

MB-150

Medium - Low Friability
Semi Blocky Shape
Density 3.52 g/cm^3

Description

Semi-blocky shaped crystal that is recommended where the optimal balance of free cutting action and extended tool life is desired. The MB-150's ability to continuously regenerate new cutting edges and high impact resistance make it an excellent choice when grinding difficult materials.

MB-200

Low Friability
Blocky Shape
Density 3.52 g/cm^3

Description

Uniform, blocky shaped crystal that requires the most force per grit to generate new cutting edges. The MB-200 provides long tool life where high material rates are desired.

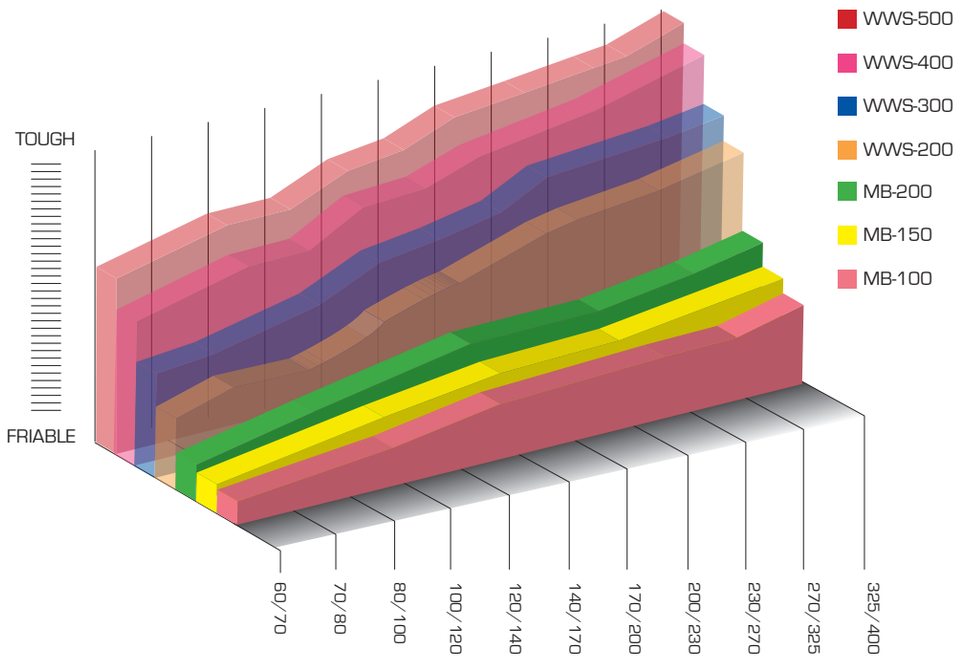
Resin Bond systems are widely used for all-purpose superabrasive grinding applications in either phenolic or polyimide bonds. Resin bond systems can be utilized in either wet or dry grinding operations and offer excellent particle retention and part finish.

Vitrified Bond systems are manufactured from ceramic materials that are strong, durable and brittle. Vitrified bonds are very effective in advanced grinding operations because of their ability to hold the abrasive and reduce heat generation in the grinding zone due to their high porosity levels when compared to other bond types.

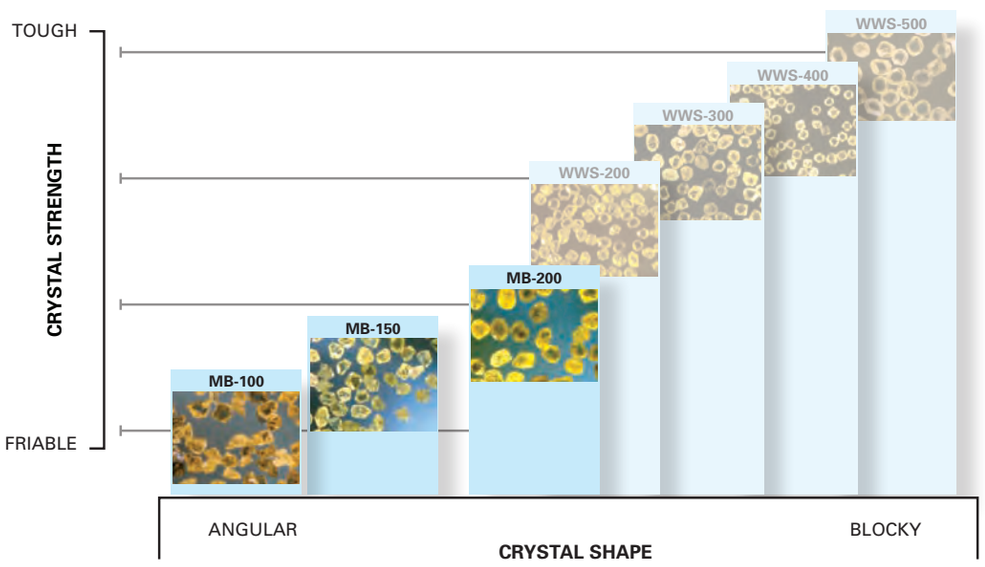
Metal Bond systems are the toughest formed bonds available and are recommended for wet grinding. Metal bonds exhibit high abrasive and heat resistance along with excellent form holding capabilities leading to extended tool life.

Single Layer Bond systems (electroplated and brazed) hold a single layer of superabrasive grains bonded to a precision machined form. Electroplated systems are bonded with a Nickel matrix and leave approximately 50% of the abrasive exposed while brazed systems leave approximately 80% of the abrasive exposed. Single layer bond systems typically do not require dressing.

Friability Comparisons of MB Series



Shape Comparisons of MB Series



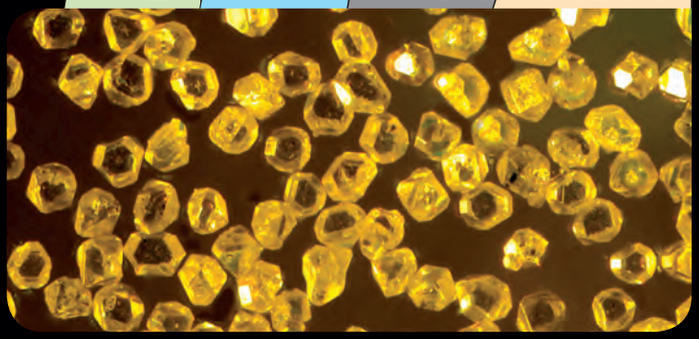
Metal Bond Mesh (crystalline)

Our WWS line of metal bond crystalline diamond products are widely used in resin bond, metal bond, vitreous bond and electroplated bond systems.

Uniform shape and size control, along with consistent fracturing modes for each respective product make our WWS line of products ideal for a variety of glass grinding applications, grinding tungsten carbide, fiberglass and other composite materials.

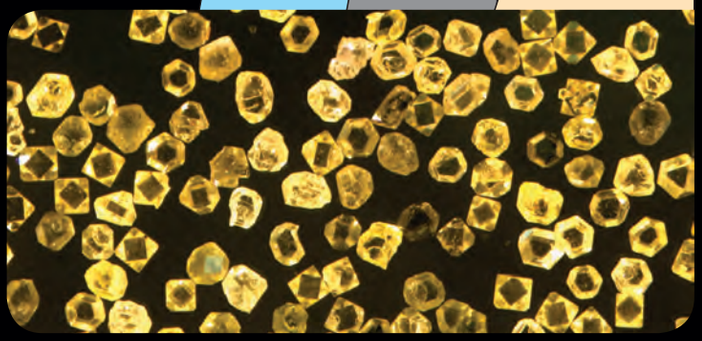
WWS-200

RESIN | VITRIFIED | METAL | SINGLE LAYER



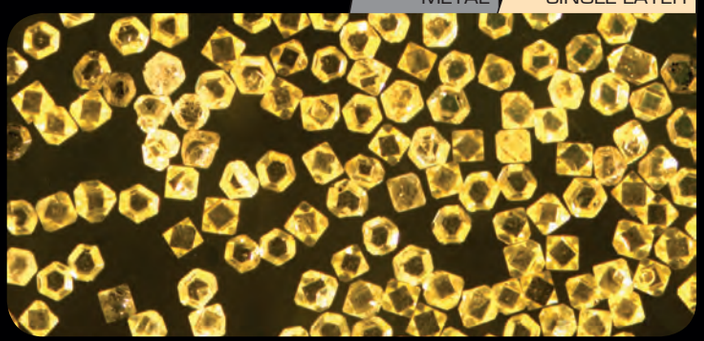
WWS-300

VITRIFIED | METAL | SINGLE LAYER



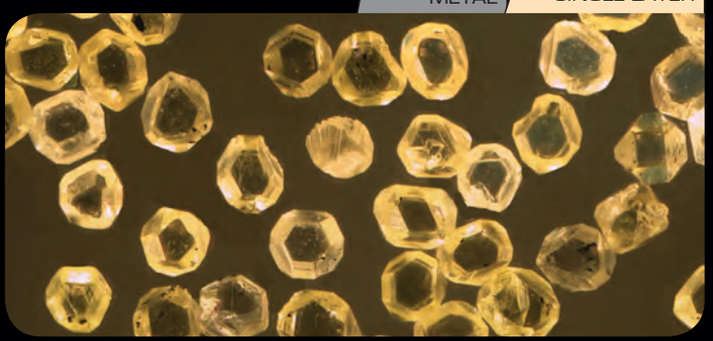
WWS-400

METAL | SINGLE LAYER



WWS-500

METAL | SINGLE LAYER



WWS-200

Low - Medium Friability
Blocky Shape
Density 3.52 g/cm^3

Description

A medium quality, semi-crystalline blocky shaped crystal with good toughness and thermal stability. Increased friability vs. the WWS-300 and an improved surface texture on the WWS-200's crystal facets produce a free cutting crystal that regenerates new cutting edges with moderate grinding force.

WWS-300

Low Friability
Cubo-Octahedral Shape
Density 3.52 g/cm^3

Description

High quality cubo-octahedral diamond that is thermally stable, requires high grinding forces to generate new cutting edges and fractures in a controlled manner. Uniform shape, along with the WWS-300's free cutting capability.

WWS-400

Low Friability
Cubo-Octahedral Shape
Density 3.52 g/cm^3

Description

Excellent cubo-octahedral crystal shape, high impact strength and very high thermal stability make the WWS-400 suitable for demanding applications where high production rates are desired.

WWS-500

Very Low Friability
Cubo-Octahedral Shape
Density 3.52 g/cm^3

Description

Uniform shaped cubo-octahedral crystals that exhibit very high toughness and exceptional thermal stability along with minimal internal impurities.

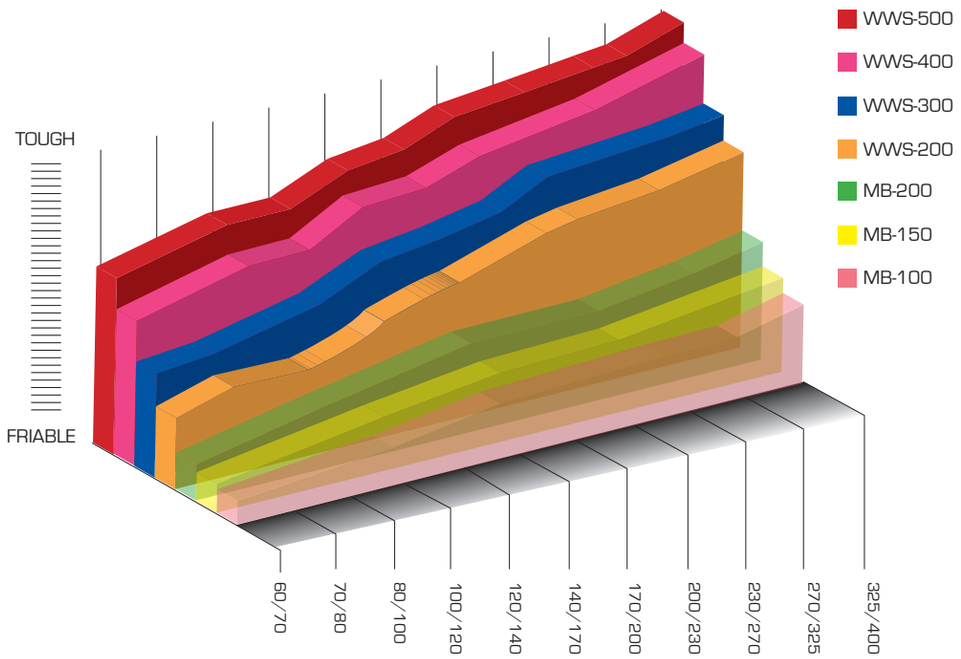
Resin Bond systems are widely used for all-purpose superabrasive grinding applications in either phenolic or polyimide bonds. Resin bond systems can be utilized in either wet or dry grinding operations and offer excellent particle retention and part finish.

Vitrified Bond systems are manufactured from ceramic materials that are strong, durable and brittle. Vitrified bonds are very effective in advanced grinding operations because of their ability to hold the abrasive and reduce heat generation in the grinding zone due to their high porosity levels when compared to other bond types.

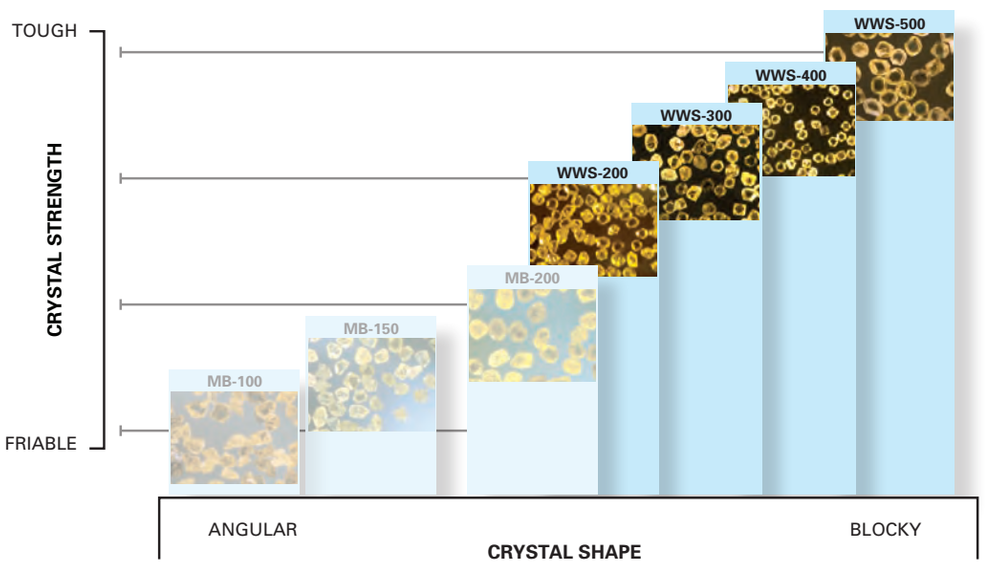
Metal Bond systems are the toughest formed bonds available and are recommended for wet grinding. Metal bonds exhibit high abrasive and heat resistance along with excellent form holding capabilities leading to extended tool life.

Single Layer Bond systems (electroplated and brazed) hold a single layer of superabrasive grains bonded to a precision machined form. Electroplated systems are bonded with a Nickel matrix and leave approximately 50% of the abrasive exposed while brazed systems leave approximately 80% of the abrasive exposed. Single layer bond systems typically do not require dressing.

Friability Comparisons of WWS Series



Shape Comparisons of WWS Series



Metal Bond Saw Grit

Our WSG saw grit line of metal bond crystalline diamond products are specifically engineered to satisfy all stone applications and construction industries, which are mainly used in a wide range of drilling, grinding and sawing applications of glass, stone, asphalt and concrete.

The bright yellow crystals are mostly cubo-octahedral shaped which distinguishes this arrangement from other products as it is characterized to have excellent thermal stability, high impact resistance and ideal particle breakdown integrity.

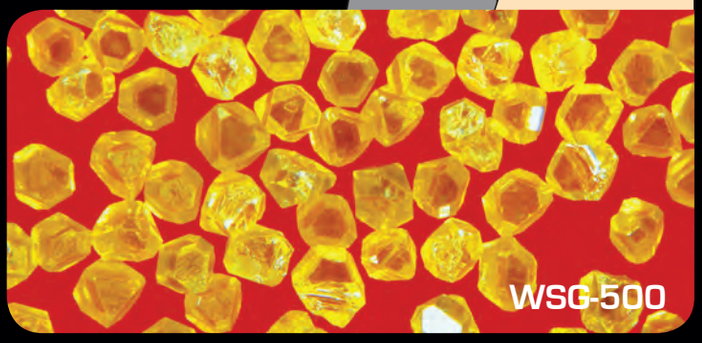
WSG-200 WSG-300

VITRIFIED | METAL | SINGLE LAYER



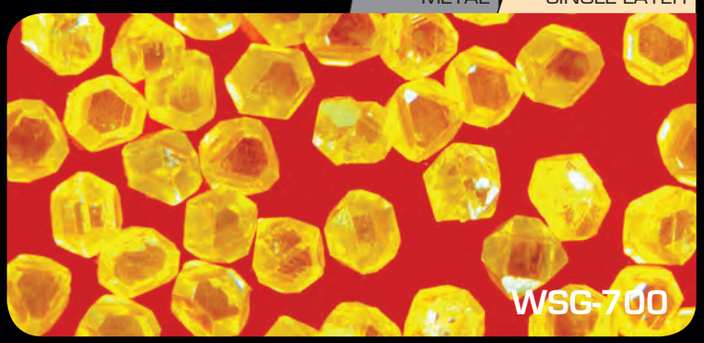
WSG-400 WSG-500

METAL | SINGLE LAYER



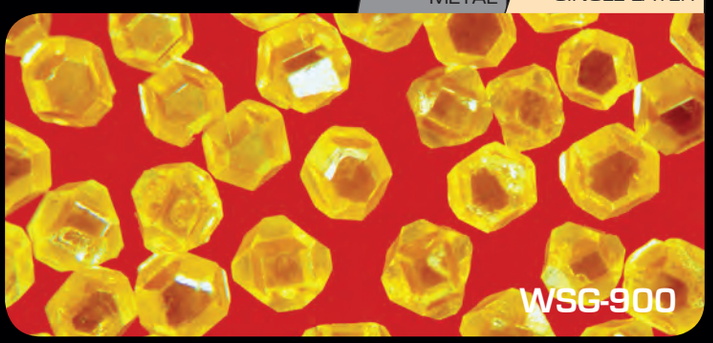
WSG-600 WSG-700

METAL | SINGLE LAYER



WSG-800 WSG-900

METAL | SINGLE LAYER



WSG-200/300

Medium Friability

Angular/Blocky Shape

Density 3.52 g/cm^3

Description

The WSG-200 is an economic grade and most friable product in our saw grit series with a wider strength and shape distribution than our WSG-300.

Combined with a blend of friable crystals and cubo-octahedral diamond, the WSG-300 is designed for moderate impact strength applications.

WSG-400/500

Low - Medium Friability

Blocky/Cubo-Octahedral Shape

Density 3.52 g/cm^3

Description

The WSG-400 offers a higher impact strength while maintaining excellent thermal stability and impact resistance.

Shaped with high purity of cubo-octahedral crystals, the WSG-500 exhibits high toughness which is suitable for applications where high production rates are desired.

WSG-600/700

Low Friability

Cubo-Octahedral Shape

Density 3.52 g/cm^3

Description

The WSG-600 is the highest grade of our mid range products with minimal internal impurities, an ideal quality diamond for demanding medium impact and low power applications.

The WSG-700 is mostly crystal cubo-octahedral shaped product with low inclusions, high purity and exceptional thermal stability.

WSG-800/900

Very Low Friability

Cubo-Octahedral Shape

Density 3.52 g/cm^3

Description

The WSG-800 is a high grade diamond which features a tightly controlled shape of cubo-octahedron crystals. Ideal as a high quality diamond for high performance sawing and heavy powered applications.

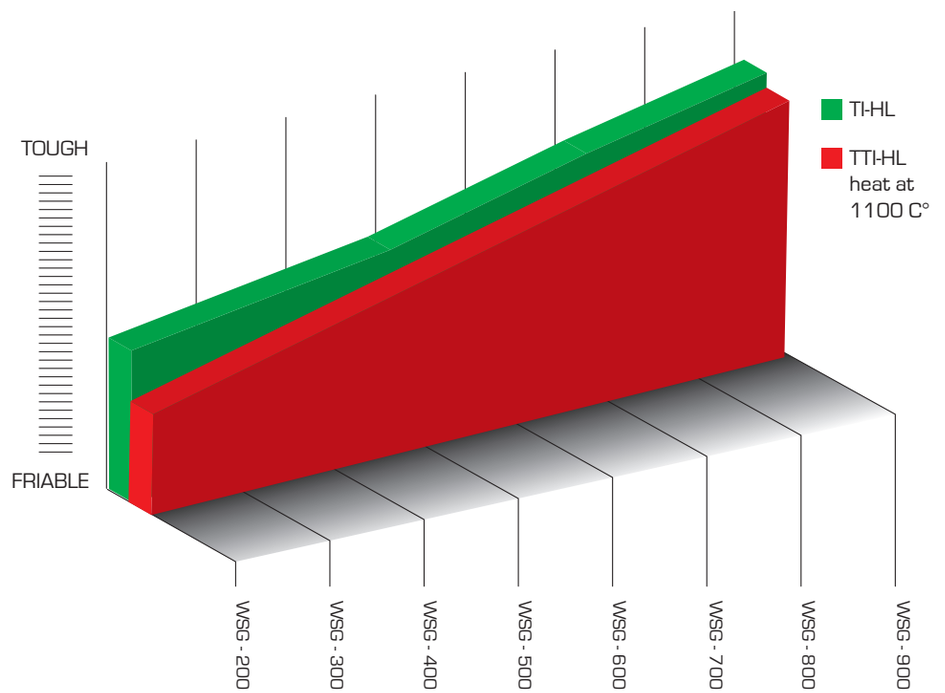
The WSG-900 is the highest quality grade diamond is consistently cubo-octahedal shaped offering very high strength and excellent thermal stability which is optimal for high power and very high impact sawing and drilling applications.

Vitrified Bond systems are manufactured from ceramic materials that are strong, durable and brittle. Vitrified bonds are very effective in advanced grinding operations because of their ability to hold the abrasive and reduce heat generation in the grinding zone due to their high porosity levels when compared to other bond types.

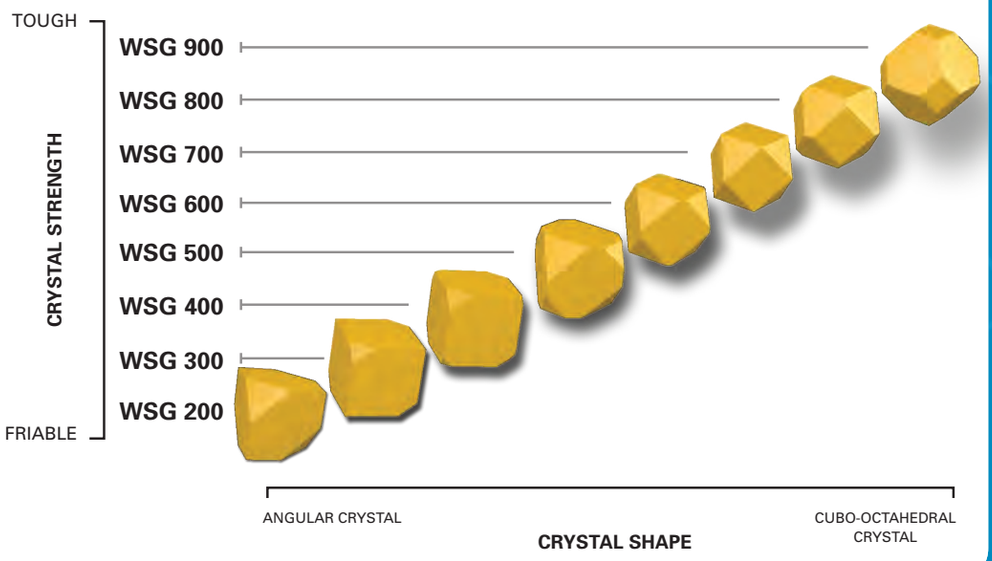
Metal Bond systems are the toughest formed bonds available and are recommended for wet grinding. Metal bonds exhibit high abrasive and heat resistance along with excellent form holding capabilities leading to extended tool life.

Single Layer Bond systems (electroplated and brazed) hold a single layer of superabrasive grains bonded to a precision machined form. Electroplated systems are bonded with a Nickel matrix and leave approximately 50% of the abrasive exposed while brazed systems leave approximately 80% of the abrasive exposed. Single layer bond systems typically do not require dressing.

TI-HL and TTI-HL Comparisons of WSG Series



WSG Shape Distribution



Resin Bond Micron (RB-Micron)

Our RB diamond micron powder is accurately graded from friable resin bond diamond particles and is ideal for all vitrified bond and resin bond (phenolic) systems. WWSA's RB micron consists of uniformly shaped blocky particles carefully graded for carbide, glass and ceramic grinding where surface finish quality is critical.

RB-M1



RB-M1

Description

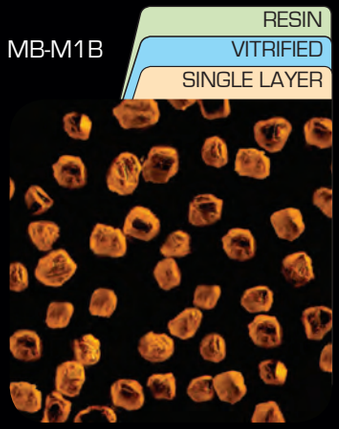
The RB-M1's ability to microfracture allows the crystal to continuously generate new cutting edges. This along with consistent shape and controlled particle distributions, make the RB-M1 an excellent choice.

Micro Size	0-0.25	0-0.5	0-1	0-2	1-2	1-3	2-3	2-4	3-5	5-7	7-10	8-16	10-20	12-22	20-25	20-30	22-36	30-40	40-60
RB-M1																			
RB-M1 N30																			
RB-M1 N56																			
RB-M1 C50																			

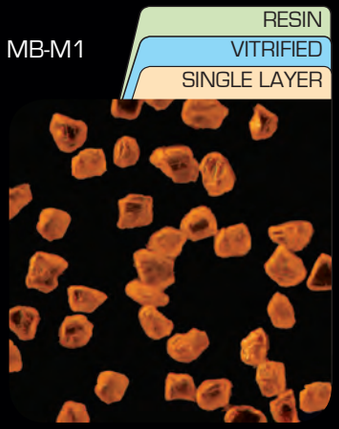
Metal Bond Micron (MB-Micron)

Our line of MB diamond micron powders are precisely produced from selected metal bond diamond and are recommended for resin bond (phenolic), vitrified bond and electroplated bond systems.

MB-M1B



MB-M1



MB-M1B

Description

An enhanced blocky shaped metal bond micron that delivers a tightly controlled size, shape and surface properties. The presence of consistent uniform crystals makes the MB-M1B a superior micron product.

MB-M1

Description

A blocky shaped, tough metal bond micron with uniform particle distribution and tight oversize control, the MB-M1 is a sound choice when surface finish integrity is critical.

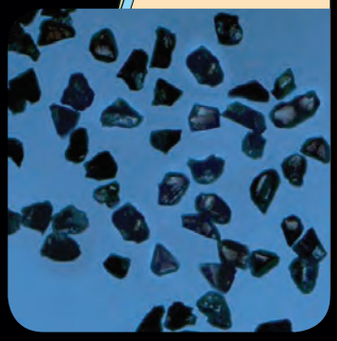
Micro Size	0-0.25	0-0.5	0-1	0-2	1-2	1-3	2-4	3-5	4-6	4-8	6-10	8-12	8-15	10-20	12-22	15-25	20-30	25-35	30-40	40-60
MB-M1																				
MB-M1 N30																				
MB-M1 N56																				
MB-M1 C50																				
MB-M1B																				

Cubic Boron Nitride Micron (cBN-Micron)

Cubic Boron Nitride (CBN) micron powder is graded from our own CBN grit, an ideal abrasive for PCBN, ferrous lapping, polishing and finishing applications.

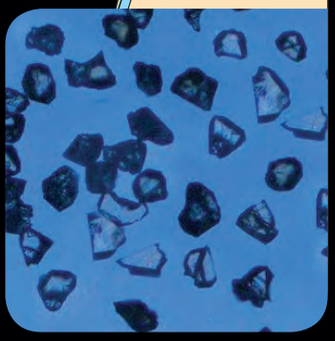
cBN-BMI

RESIN
VITRIFIED
SINGLE LAYER



cBN-AMA

RESIN
VITRIFIED
SINGLE LAYER



cBN-BMI

Description

Our CBN-BMI is a grey black monocrystalline micron that offers high toughness and high thermal stability which is widely used in PCBN, fine grinding, ferrous lapping and polishing applications.

cBN-AMA

Description

The CBN-AMA is amber in color, semi tough and thermally stable for resin and vitrified bond systems including PCBN, fine grinding, ferrous lapping and polishing applications.

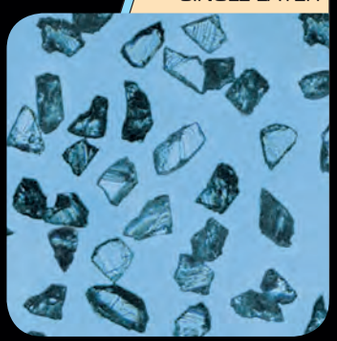
Micro Size	0-0.25	0-0.5	0-1	0-2	1-2	1-3	2-4	3-6	4-8	5-10	8-12	8-16	10-20	12-22	15-25	20-30	22-36	30-40	40-60
CBN-AMA																			
CBN-AMA N60																			
CBN-BMI																			
CBN-BMI N60																			

Natural Micron (NAT-Micron)

Our NAT micron is produced from natural industrial diamond which is graded in all respects to conform to ANSI and FEPA sizing standards. Natural diamond micron offers the ability to maintain sharp cutting edges required for free cutting machining application.

NAT-M1

VITRIFIED
SINGLE LAYER



NAT-M1

Description

The NAT-M1 is composed of blocky and irregular free cutting particles in shape, ideally for specific grinding applications, also polishing and fine lapping of diamond wire dies.

Micro Size	0-0.25	0-0.5	0-1	0-2	1-2	1-3	2-4	3-5	4-6	4-8	6-10	8-12	8-15	10-20	12-22	15-25	20-30	25-35	30-40	40-60
NAT-M1																				

Natural Diamond Mesh

Natural Diamond continues to play a critical role in the modern world of superabrasives. Our line of Natural Diamond mesh products are the material of choice in many grinding applications and electroplated tool products, due to its crystal strength and free cutting characteristics.

NAT-100

METAL | SINGLE LAYER



NAT-150

METAL | SINGLE LAYER



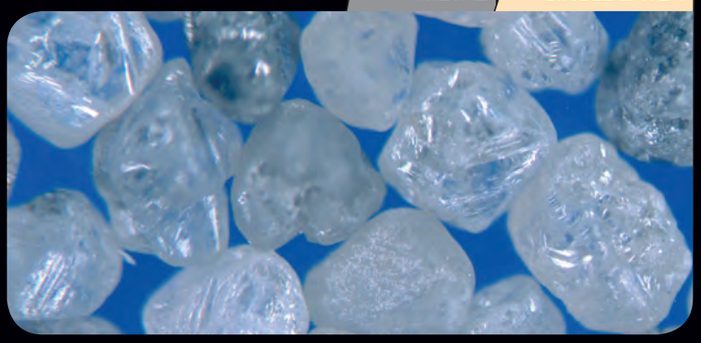
NAT-P5

METAL | SINGLE LAYER



NAT-P20

METAL | SINGLE LAYER



NAT-FP

METAL | SINGLE LAYER



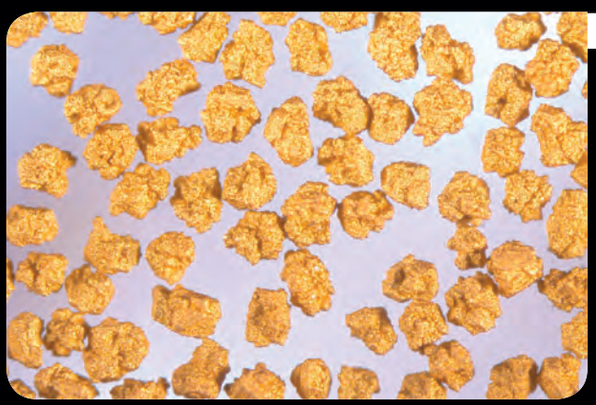
	Description
NAT-100 Medium Friability Angular Shape Density 3.52 g/cm^3	The NAT-100 is a natural diamond product that is combined with more friable and irregular sharp cutting particles, and semi blocky crystals.
NAT-150 Medium - Low Friability Blocky Shape Density 3.52 g/cm^3	The NAT-150 is composed of blocky natural diamond crystals. Ideally suited for grinding applications with its sharp cutting edges and electroplated applications.
NAT-P5 Low Friability Slightly Rounded Shape Density 3.52 g/cm^3	The NAT-P5 is a 5% polished diamond, slightly rounded and chemically polished.
NAT-P20 Low Friability Well Rounded Shape Density 3.52 g/cm^3	Our NAT-P20 is 20% processed and chemically polished for a well rounded shape.
NAT-FP Low Friability Rounded Spherical Shape Density 3.52 g/cm^3	The NAT-FP is a machine polished premium natural diamond with a highly rounded shape and a superior surface texture.

WWSA's World Class Metallic Coatings

Since our inception WWSA's focus has been to provide world-class metallic coatings at competitive prices. Over the years WWSA's intense R&D efforts have produced Nickel, Copper and Titanium coatings that compete with any superabrasive manufacturer. WWSA's R&D team continues to pursue new coating solutions that will improve our customer's tool life, efficiency and workpiece integrity.

Our relentless determination to automate our coating processes ensure that our customers will receive consistent coated products with each shipment along with increasing our productivity. WWSA's current Nickel, Copper and Titanium annual coating capacity is currently 120,000,000 carats and we strive to increase this number every day.

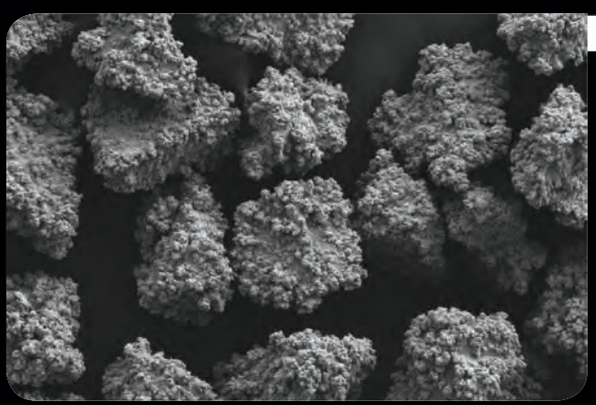
WWSA's new comparative coating analysis provides us with the ability to measure our lot-to-lot coating consistency as well as compare our coating integrity with competitive products available in today's marketplace.



COPPER 50%

WWSA's standard Copper Electroless 50% (by weight) Coating offers an improved mechanical retention of the diamond particle in the resin bond matrix and provides excellent heat dissipation. WWSA's Copper coating is suggested for dry grinding applications where its higher thermal conductivity provides an advantage when compared to Nickel coatings.

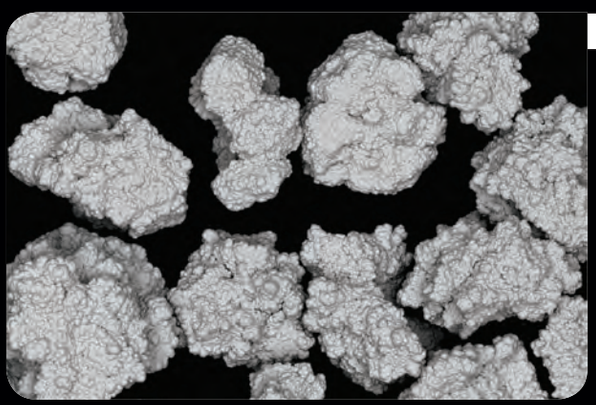
Density 4.9 g/cm^3



NICKEL 30% / 56%

Nickel Electroless 30% and 56% (by weight) Coatings are widely used to enhance the mechanical retention of the diamond in phenolic and polyimide resin bond systems. The durable bond between the Nickel and the crystal provides an increased particle retention in the resin bond matrix, thus improving wheel life and work piece integrity. WWSA's Nickel coatings feature a very dendritic texture which results in longer tool life when compared to other Nickel coatings available on the market.

Density 4.2 - 5.1 g/cm^3

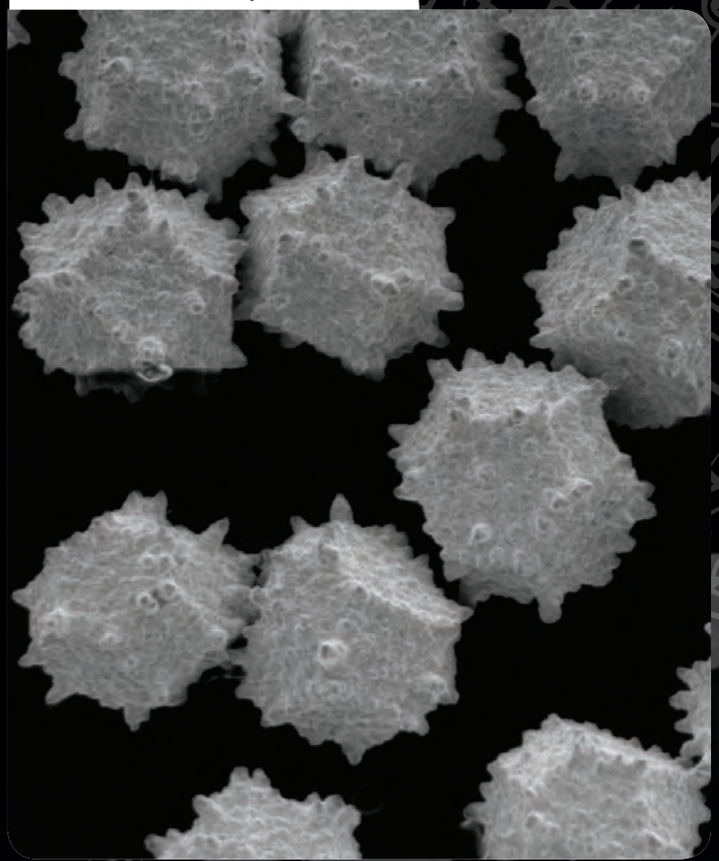


SP NICKEL 60%

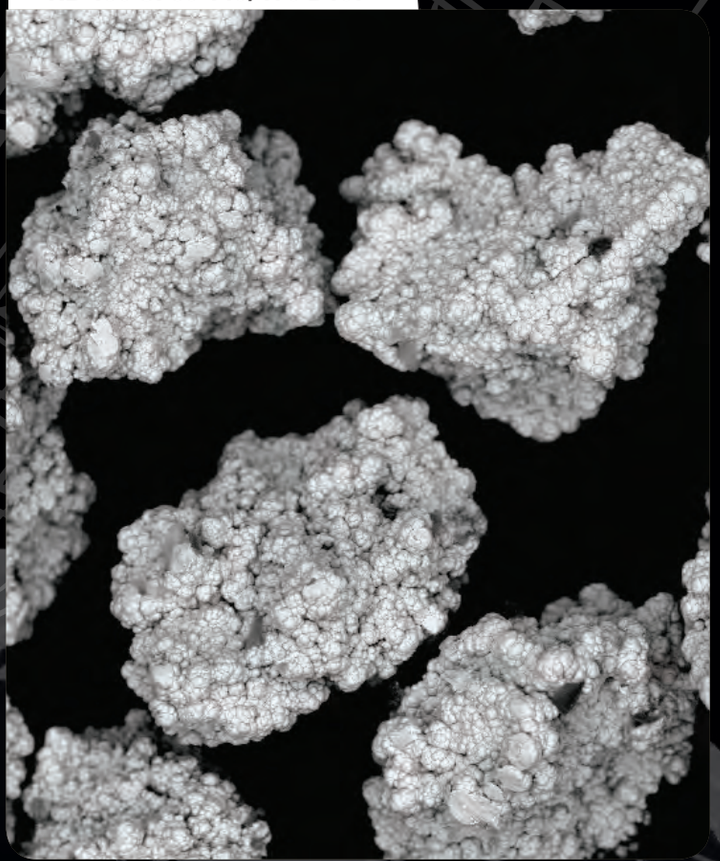
WWSA's hybrid Nickel coating increases tool life in the appropriate phenolic and polyimide resin bond systems. The pronounced spiky surface texture and elongated dendrites provide increased mechanical retention, very high material removal rates and improved formholding of the resin bond grinding wheel. The SP 60% coating produced a result 8X better than our competitors in our comparative coating test. The SP hybrid coating is available in 56% and 60% by weight.

Density 5.45 g/cm^3

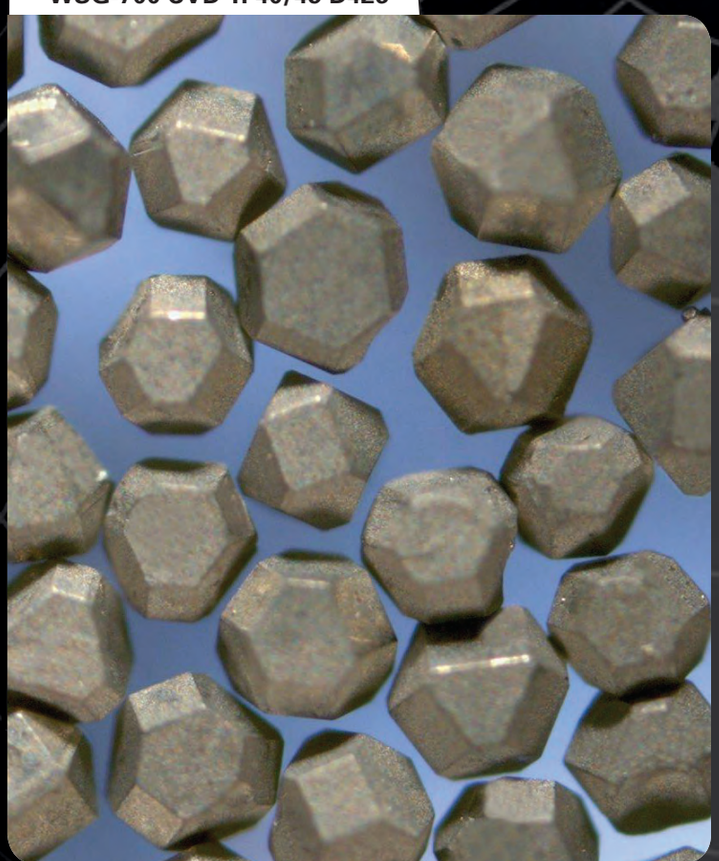
WSG-900 TiNi 35/40 D501



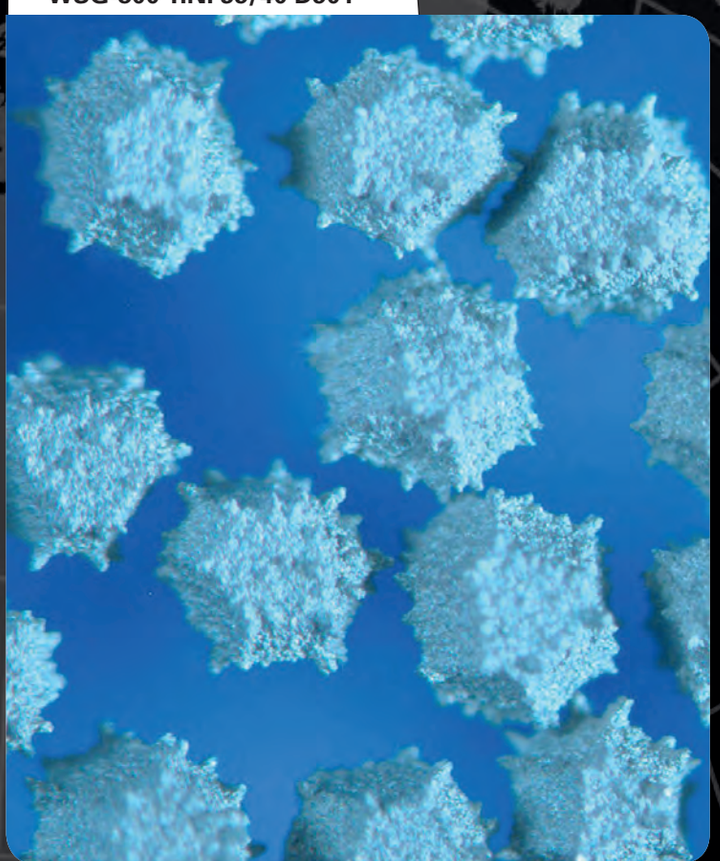
RB-150 SP60 140/170 D107



WSG-700 CVD Ti 40/45 D426



WSG-800 TiNi 35/40 D501



WWSA supplies over 125 products of the highest quality of industrial diamond and cBN to over 100 customers in 20 countries around the world.



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ISO 9001:2008 CERTIFIED

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