



# The MBS\* 900 Diamond Series Uncoated Crystals



## The MBS 900 Diamond Series Uncoated Product Line

### Premium Diamond

The MBS 900 diamond series is a full line of advanced engineered crystals designed for sawing and drilling applications. Product characteristics of size, shape, impact toughness, fracture strength, and thermal stability have been designed to meet performance requirements for a wide range of sawing and drilling applications in the stone processing, renovation and construction industries.

### The Art of Diamond Characterization

MBS 900 diamond series is manufactured under a process of new engineering methodology. Diamond Innovations developed revolutionary characterization techniques to reach the highest level of product quality and consistency.

### Quantifiable Shape Measurement

Diamond Innovations has taken the procedure of visual shape characterization from an art to a science, with shape characterization utilizing computer image analyses. For the first time, “eccentricity” – a quantifiable measurement of shape, is used as part of an engineering process to create, characterize, and evaluate premium grade MBS diamond.

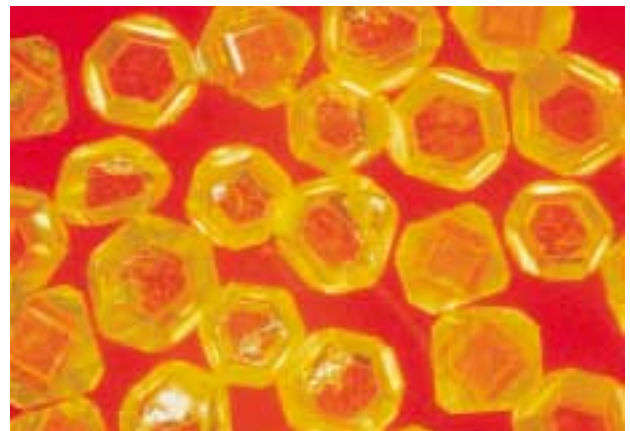
### Crystal Strength Well-Defined

Compressive Fracture Strength (CFS) testing, more closely resembles the actual dynamic impact loading a crystal experiences during a cutting process than any other conventional method. It provides a genuine distribution of strengths within a population of diamonds. Diamond Innovations is able to engineer diamonds to maximize the effects of compressive fracture strength.

## MBS 970 Diamond The Highest Performing Diamond on the Market

**Future technology available today:  
Improved wear performance –  
decreased power consumption**

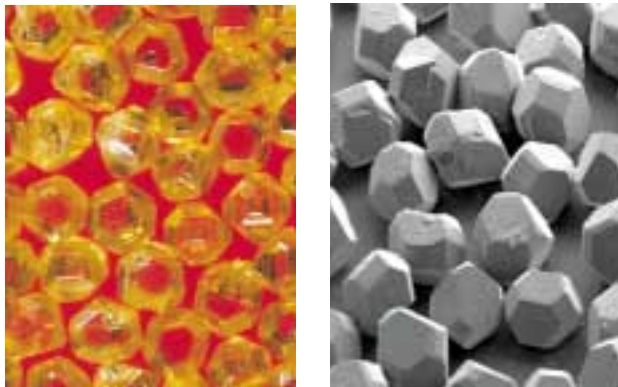
Developed through innovative new diamond characterization technology in the fields of optical spectroscopy, image analysis, and fracture mechanics. MBS 970 diamond shows improved wear performance ranging up to 50% depending on the application, while power consumption decreases as much as 10%.



**MBS 970** diamond contains engineered crystals with extremely high strength, thermal stability, and controlled shapes.

**MBS 970** diamond is specifically designed for high performance sawing and drilling applications such as reinforced concrete, asphalt, wire sawing, multiblade and large blade slabbing in granite as well as core drilling.

## Premium Grades

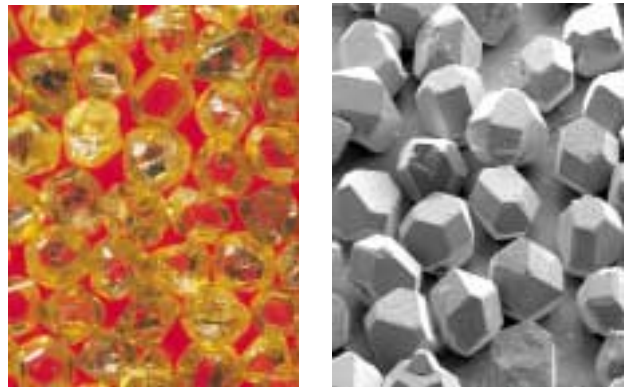


**MBS 960** diamond engineered with optimized shape, inclusion level and impact strength. For very high impact/high power applications.

**MBS 950** diamond designed with low inclusions, high thermal strength, and narrow shape distributions for high impact/power restricted machines.

**MBS 955** diamond and **MBS 945** diamond are high grade mid-range products designed for high impact applications under a wider range of sawing conditions. Contains the same high quality crystals as the base product, with a broader distribution of shape and strength properties.

## Medium Grades

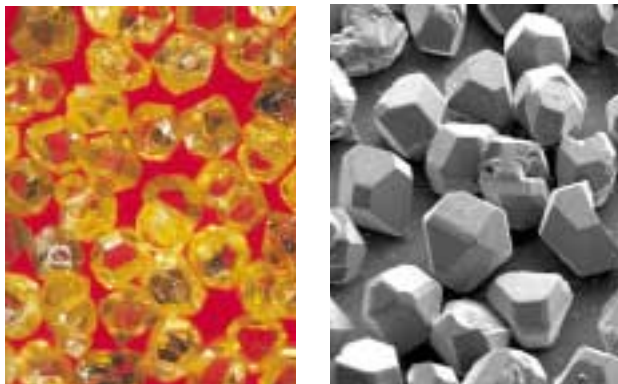


**MBS 940** diamond maintains a low inclusion level, while allowing for a wider variety of shapes and strength. Ideal as a quality diamond in general purpose applications.

**MBS 930** diamond is a medium friable diamond retaining a high percentage of good whole cutting shapes. For general quality blades and as premium diamond for dry cutting blades.

**MBS 935** diamond and **MBS 925** diamond medium grade mid-range products for light applications where moderate impact strength is required. Crystals show a broader distribution of shape and strength properties versus 940 and 930 respectively.

## Economy Grades

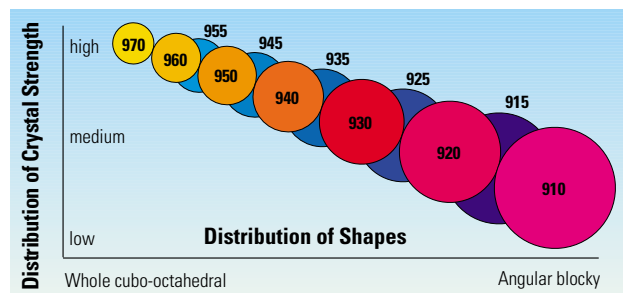


**MBS 920** diamond moderately friable diamond with a combination of cubo-octahedral crystals and other good whole shapes. Impact strength is sufficient for moderate applications.

**MBS 915** diamond economy grade mid-range product designed for use in light applications where moderate impact strength is required, and tool life is not critical. Contains crystals similar to those in 920 but with a broader distribution of shape and strength.

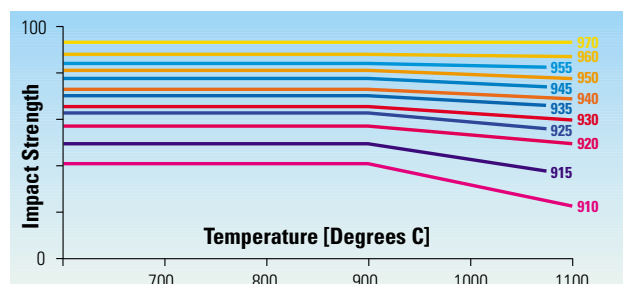
**MBS 910** diamond is highly friable and therefore ideally suited for light duty, low cost applications.

## Product Design Concept of MBS 900 Diamond Series



Circular areas encompass the distribution of crystal strengths and shapes contained within each product.

## Impact Strength Thermal Toughness Ranking of MBS 900 Diamond Series



Products are ranked by impact resistance and are subjected to heat in an inert atmosphere.

## General MBS Diamond Application Guidelines

970	960 955	950	945	940 935	930	925	920	915	910
Very High Impact High Power Machine High Cutting Rates	High Impact Power Restricted Machine		Medium Impact		Low Impact				Very Low Impact
<b>Concrete / Asphalt</b> Reinforced Tough aggregates	<b>Concrete / Asphalt</b> Reinforced All aggregates		<b>Concrete / Asphalt</b> Non-reinforced Medium aggregates Light aggregates		<b>Concrete / Asphalt</b> Hand-held equipment				<b>Concrete / Asphalt</b> Hand-held equipment Do-it-yourself cutters
<b>Granite</b> Wire sawing Multiblade slabbing Large blade slabbing Trimming	<b>Granite</b> Wire sawing Multiblade slabbing Large blade slabbing Trimming		<b>Granite</b> Trimming Calibrating		<b>Granite</b> Polishing				<b>Marble / Limestone / Softstone</b> Wire sawing Frame sawing Polishing
<b>Marble / Limestone</b> Belt sawing			<b>Hard Marble / Limestone</b> Wire sawing Frame sawing Trimming Calibrating		<b>Soft Marble / Limestone</b> Wire sawing Frame sawing Trimming				<b>Natural diamond replacement</b>
<b>Exploration / Mining</b> Core drilling									

## MBS Diamond Mesh Size / FEPA Sizes Available

US Mesh (FEPA)	Single sizes										Combined sizes <sup>1</sup>							
	20/25 (D851)	25/30 (D711)	30/35 (D601)	35/40 (D501)	40/45 (D426)	45/50 (D356)	50/60 (D301)	60/70 (D251)	70/80 (D213)		20/30 (D852)	25/35 (D712)	30/40 (D602)	35/45 (D502)	40/50 (D427)	45/60 (D357)	50/70 (D302)	60/80 (D252)
970		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
960 - 910	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

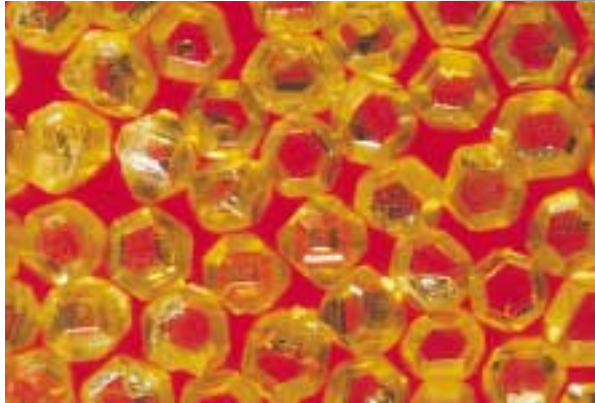
T-process available on all offered sizes and grades.

<sup>1</sup> All combined size ranges are held to ± 5% tolerance of single size composition.

Diamond Innovations' quality systems are registered under ISO 9002. Registration numbers FM 14757 and M 466.

**Convenient online ordering through  
[www.AbrasivesNet.com](http://www.AbrasivesNet.com)**

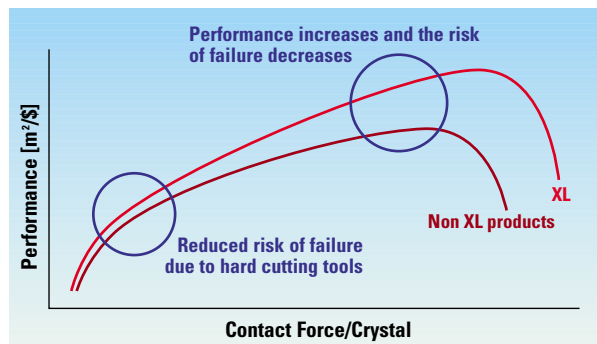
# MBS\*XL Diamonds Enhanced Crystal Design Now Available in Expanded Grade Range



## Tougher, Faster, More Economical

MBS XL diamonds are the result of an enhanced crystal design of the Diamond Innovations MBS 900 series for applications, where an extremely robust performance is the key to success. First introduced for MBS 950 XL and 960 XL premium grades, the impressive success of this new crystal design is now being extended to additional MBS 900 XL grades. MBS XL diamonds perform tougher, faster and more economical, allowing the use of enhanced cutting parameters, yet still delivering considerably longer tool life. The MBS XL proprietary diamond design technology reduces the risk of field failures significantly, even under the most adverse conditions.

## MBS XL Low Risk – Big Win for Tool Manufacturers and End Users



MBS XL and non XL grades as determined by Diamond Innovations' exclusive diamond characterization.

MBS XL diamonds are available in various coatings, depending on diamond grade as indicated in the availability chart. For general bond recommendations and coating selection, please refer to our brochure MBS 900 Diamond Series Coated Crystals.

## Application Guidelines for MBS XL Diamond

965 XL	960 XL 955 XL	950 XL	940 XL 935 XL
High Impact High Power Machine	High Impact Power Restricted Machine		Medium Impact
<b>Concrete / Asphalt</b> Reinforced All aggregates	<b>Concrete / Asphalt</b> Reinforced All aggregates		<b>Concrete / Asphalt</b> Non-reinforced Medium aggregates
<b>Granite</b> Wire sawing Multiblade slabbing Large blade slabbing Trimming	<b>Granite</b> Wire sawing Multiblade slabbing Large blade slabbing Trimming		<b>Granite</b> Trimming / Calibrating  <b>Hard Marble / Limestone</b> Wire sawing Frame sawing Trimming / Calibrating

## MBS Diamond Mesh Size/ FEPA Sizes Available

US Mesh (FEPA)	30/40 (D602)	35/45 (D502)	40/50 (D427)
965 XL 960 XL	✓	✓	✓
955 XL 950 XL	✓	✓	✓
945 XL 940 XL	✓	✓	✓
935 XL	✓	✓	✓

For other wide range mesh sizes please contact your local sales representative.

# Diamond Innovations HK Products

## Your Choice when Diamond Cost is Key

Diamond Innovations' HK product line is the perfect choice when diamond cost is key. HK diamond products contain a carefully composed blend of DI synthesized

diamond and sourced diamond. All HK products are classified by Diamond Innovations HK to assure quality standards are fully met.

Products	Equivalent TI	Mesh Size (FEPA)					
		30/40 D602	35/45 D502	40/50 D427	50/60 D357	60/70 D302	70/80 D213
<b>MBS-AGP1</b>	<b>910</b>		✓	✓			
<b>MBS-AGP2</b>	<b>920</b>	✓	✓	✓	✓		
<b>MBS-AGP3</b>	<b>930</b>	✓	✓	✓	✓	✓	✓
<b>MBS-AGP4</b>	<b>940</b>		✓	✓	✓	✓	✓
<b>MBS-AGP5</b>	<b>950</b>			✓	✓	✓	✓
<b>MBS-AGP6</b>	<b>960</b>			✓	✓	✓	✓
<b>MBS-AG25</b>	<b>925</b>		✓	✓	✓		
<b>MBS-AWL1</b>	<b>913</b>			✓			
<b>MBS-ADR1</b>	<b>915</b>		✓	✓	✓		
<b>MBS-ADR2</b>	<b>920</b>	✓	✓	✓	✓		
<b>MBS-ADR3</b>	<b>930</b>			✓			

HK products conform to the same quality standards as the MBS\*900 diamond series. The TTI (thermal stability) of Diamond Innovations HK products may not be as high as the equivalent 900 series grade.

<b>MBS-AGP</b>	<b>General Purpose Series</b>
<b>MBS-AEP</b>	<b>Electroplating Series</b>
<b>MBS-ADR</b>	<b>Dry Cutting Series</b>

HK products should be used with caution in bond systems fabricated at 900°C or higher, and with times at temperatures greater than 10 minutes.

MBS-AGP available with T-Treatment for electroplating applications. Please order as MBS-AEP series.



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Diamond Innovations  
6325 Huntley Road, Worthington, OH 43229, USA  
Phone: (1) 614 438 2000, Fax: (1) 614 438 2888  
Toll free: 1 800 443 1955