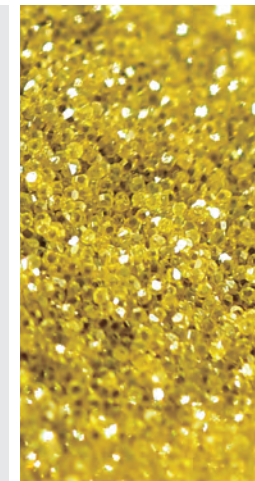




GSD
GHD



Details Make Perfect

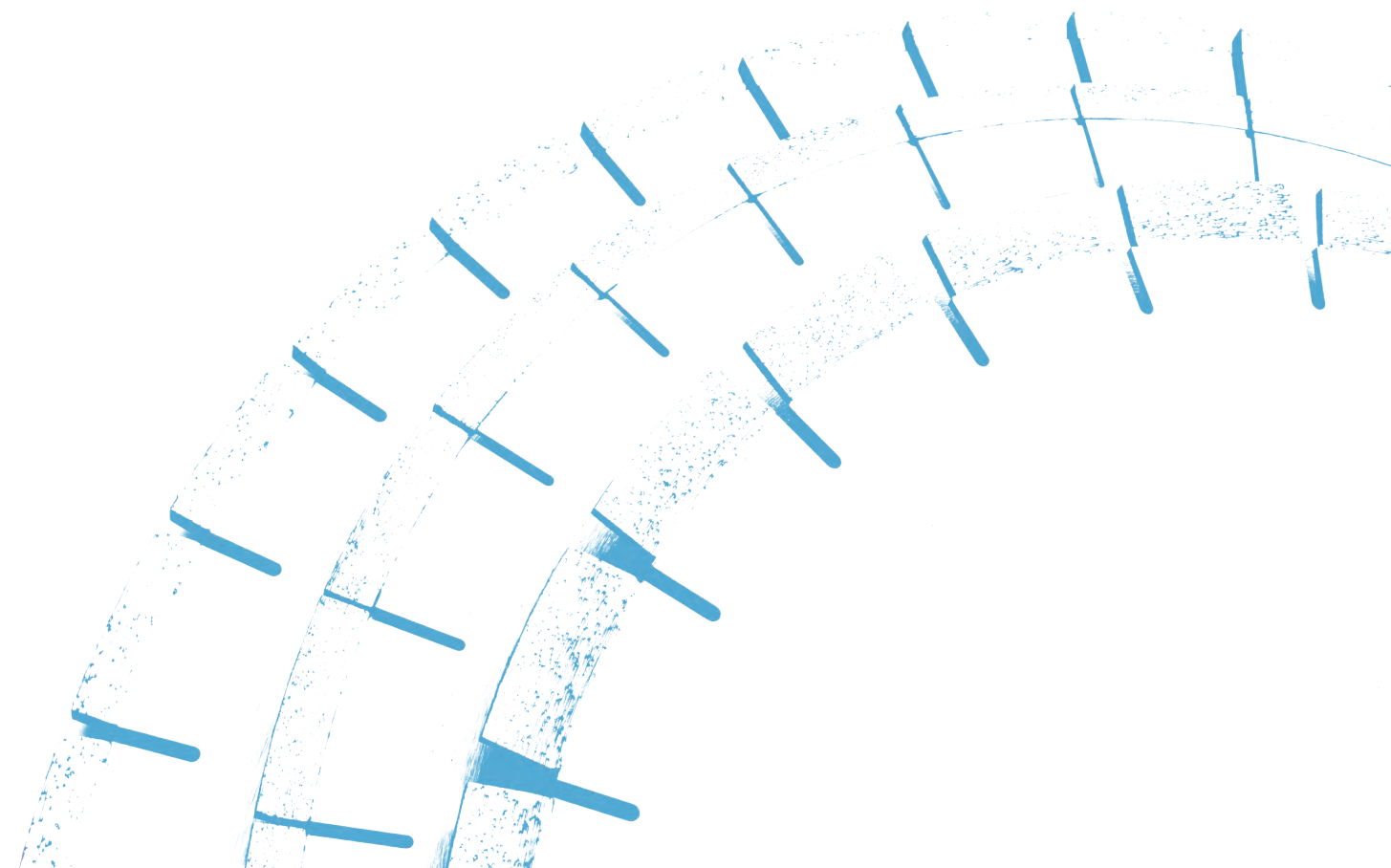
■ **SAW GRIT**

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CR GEMS

CR GEMS specializes in the development and manufacturing of quality superabrasives and PCD. Our main products, such as diamond grit, micro diamond powder, PDC cutters/PCD blanks, big monocrystal diamond, are widely used in the industries of construction, machinery, photovoltaic, semiconductor, optics, jewelry, aerospace, and oil & gas, etc. Customer oriented product and solution could be available.



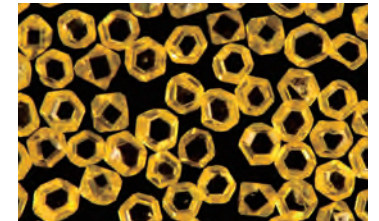
GSD Series

GSD saw grit is produced with selected raw material and controlled production process. It is monocrystal diamond featured with hexa-octahedron shape, and is suitable for sawing, drilling in the industries of stone, geology and construction.



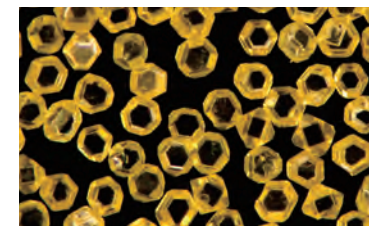
GSD9980/GSD9970

It is of regular shape, very high purity and thermal stability, fantastic high SCT and toughness. It's applicable for sawing and drilling of extremely high impact and load.



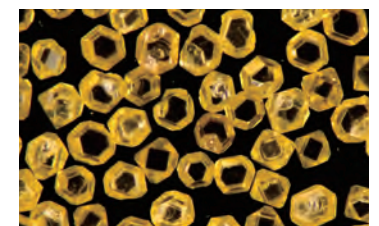
GSD9960/GSD9950

Relatively regular shape, medium-high toughness and wear resistance. It is recommended for application of medium high impact and load.



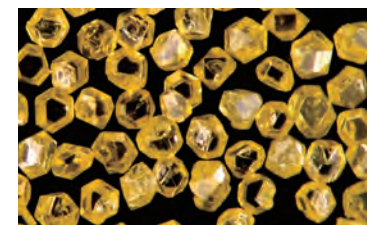
GSD9940/GSD9930

Mostly regular shaped crystals with small portion of irregular crystals. The fragile crystals have good sharpness, wear resistance, and could create new cutting edges during application of medium impact.

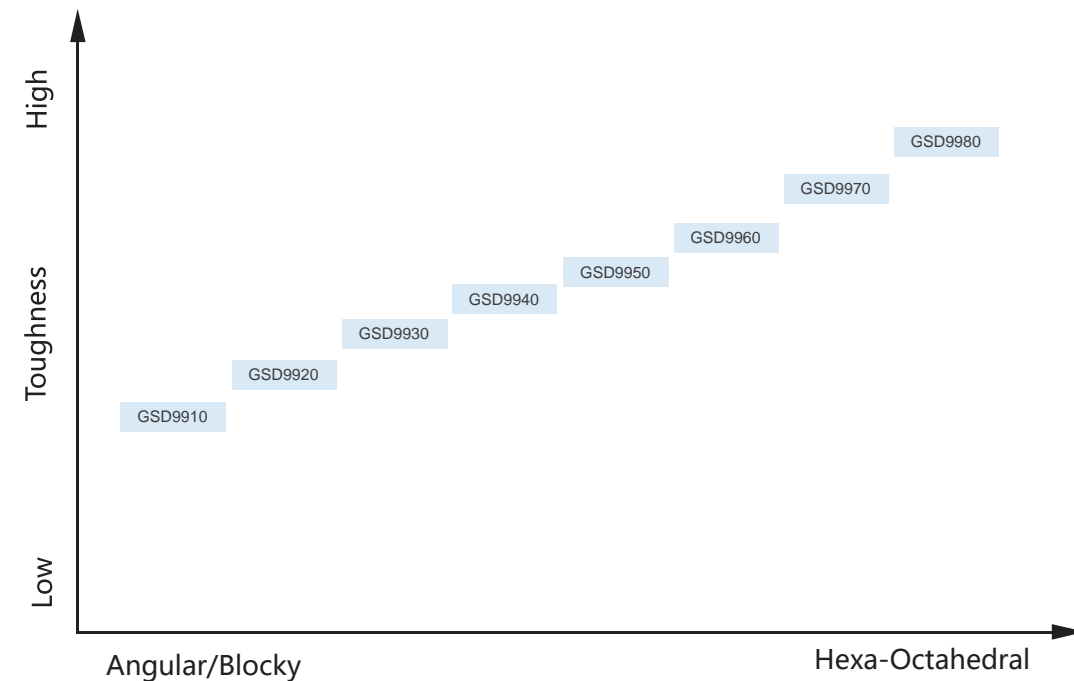


GSD9920/GSD9910

Fragile and good sharpness, and the crystals are recommended for application of low impact.

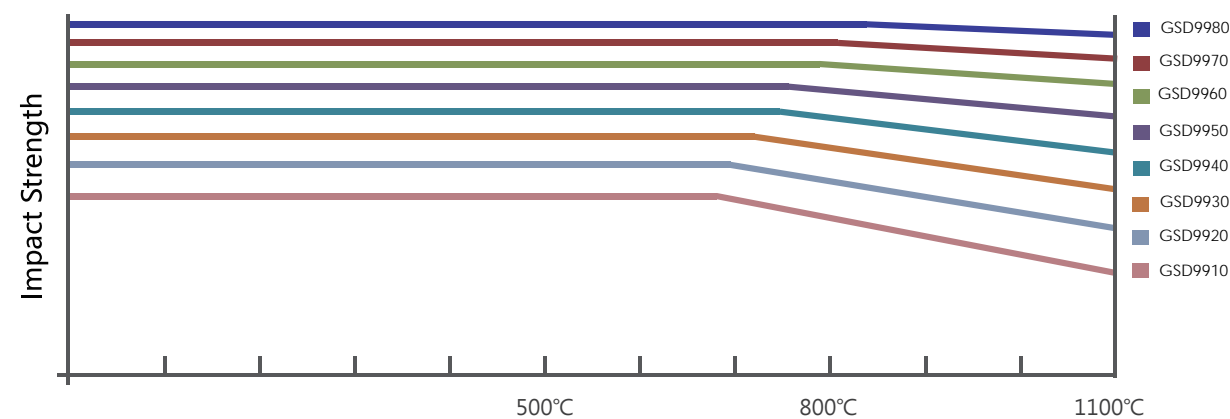


Particle Toughness and Shape



Impact Resistance and Thermal Stability

The impact resistance and thermal toughness are checked by analyzing the change of the crystal toughness while simulating the field application. It could help to choose the diamond grade according to the target application.

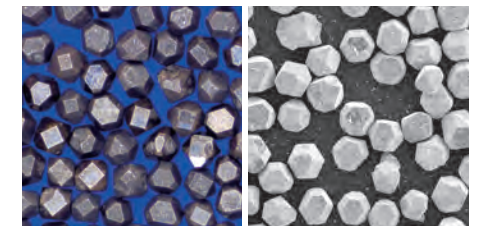


Coatings Brief

In order to fulfill requirements in more complicated sawing and drilling conditions, CR GEMS has developed different coatings that can protect the diamond from oxidation and erosion caused by carbon dissolving materials. Also, coatings can significantly enhance the retention between diamond and the bond, and thus the tool life could be extended. The coatings can help to raise the protrusion height of the diamond, and to improve drilling and cutting efficiency.

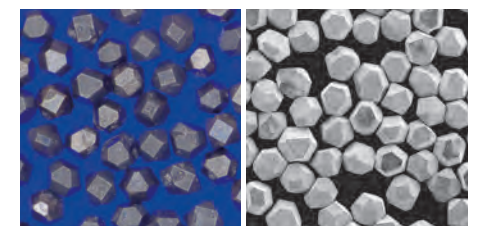
GSD-Ti

Ti is a titanium coating. The coating of titanium forms a dense protection layer on the surface of the diamond and helps to prevent the erosion of diamond by metals such as iron, chromium, and tungsten at high temperature. It can enhance the retention between diamond and bond.



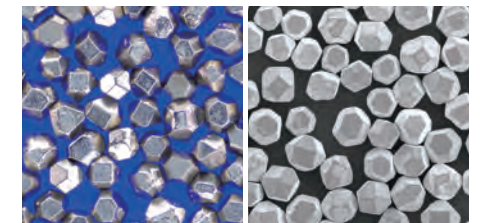
GSD-TC

TC coating creates a layer of TiC. TC coating is also a titanium coating, and is denser than Ti. TC coating can effectively expand the tools' sintering temperature and extend the tools' life span.



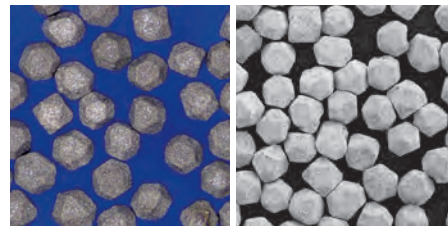
GSD-TNE

TNE is a smooth nickel alloy coating. TNE coating protects the diamond from being eroded, and strengthens the retention between diamond and bond. Meanwhile it increases the protrusion height of diamond. Therefore it greatly improves the tools' life span, cutting efficiency and reduces the energy cost.



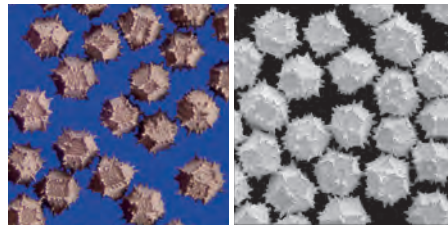
GSD-TNA

TNA is a rough nickel alloy coating. The coating improves diamond retention, protects diamond from erosion, and improves tools' life span.



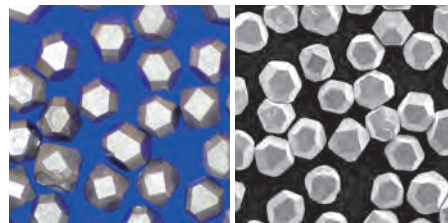
GSD-NAS

GSD-NAS is a spiked nickel alloy coating. It greatly enlarges diamond's surface area and strengthens the retention between diamond and bond, thus improves the tool's life span.



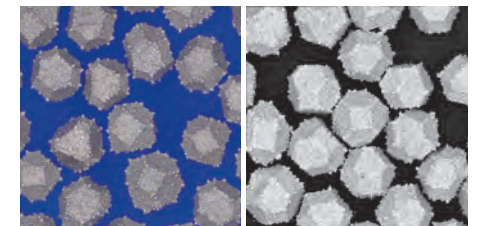
GSD-Cr

A chromium coating. Chromium has excellent surface wettability with diamond, a layer of Cr₃C₂ is formed to strengthen the retention. Chromium coating is applicable for metal bond tools.



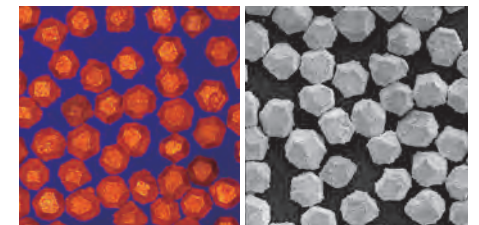
GSD-Co

The coating of cobalt could increase the retention between diamond and bond, improve the sharpness of the tools effectively and extend the tool's life.



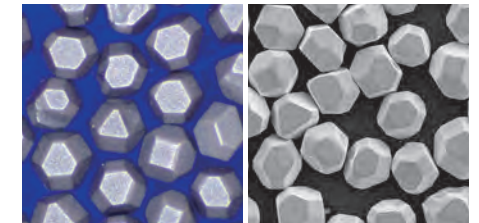
GSD-Cu

The copper coating can enhance heat conduction of diamond, and is applicable for relatively soft bond to improve tool life.



GSD-Si

Silicon coating improves diamond's corrosion resistance, wear resistance, strengthens the retention between the bond and the diamond, and improves heat conduction. Hence it can improve the workpiece surface processing quality.



Available Grade and Size

Size Grade	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)
GSD9910	—	—	*	*	*	*	*	*	*
GSD9920	—	—	*	*	*	*	*	*	*
GSD9930	—	—	*	*	*	*	*	*	*
GSD9940	*	*	*	*	*	*	*	*	*
GSD9950	*	*	*	*	*	*	*	*	*
GSD9960	*	*	*	*	*	*	*	*	*
GSD9970	*	*	*	*	*	*	*	*	*
GSD9980	*	*	*	*	*	*	*	*	*

Note: “—” stands for unavailable, “*” stands for available. The coating and coating level can be customized.

Available Coating and Coating Level

Coating Types	Description	Coating Level
Ti	Titanium	0.5%-2.0%
Tc	Titanium	1.2%-3.0%
Cr	Chromium	2.0%-4.0%
Si	Silicon	2.0%-4.0%
NAS	Nickel Alloy	56%-70%
Cu	Copper	30%、50%、56%
Co	Cobalt	
TNE	Nickel Alloy	
TNA	Nickel Alloy	

Note: The coating and coating level can be customized.

Recommended Application

Grade	Tools	Application
GSD9980/GSD9970	Wire saw, Cutting blade,etc.	Granite, Reinforced concrete, Hard marble,etc.
GSD9960/GSD9950	Combined saw blade, Frame saw, Drilling bits,etc.	concrete, Hard marble, Ceramics, Soft marble,etc.
GSD9940/GSD9930	Cutting blade,etc.	Hard marble, Ceramics ,Soft marble,etc.
GSD9920/GSD9910	Grinding tools,etc.	Hard marble, ceramics,etc.

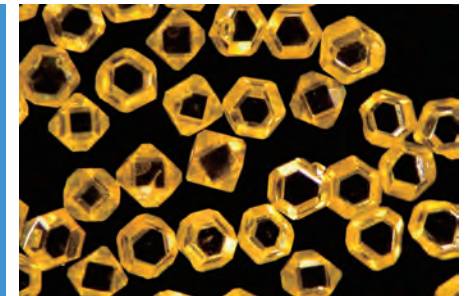


GHD Series

GHD diamond is specially designed for intensive-impact and heavy-load applications. It provides optimal solutions for stone/concrete sawing, and mining/geological drilling, etc.

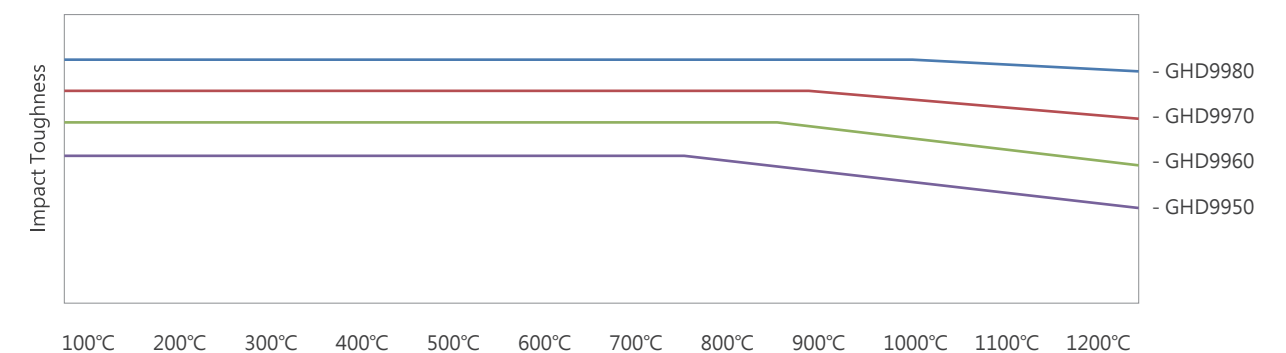


GHD Premium Saw Grit is synthesized from high purity raw material for a long growth cycle, and further demagnetized through advanced process. Therefore, GHD has higher purity, higher strength and better thermal stability.



Advantages

GHD diamond can withstand higher sintering temperature, as well as higher application temperature. That means GHD diamond can prevent erosion or graphitization at high temperature, and only micro-fracture occurs when undergoing intensive pressure. Therefore, GHD diamond can longer keep cutting/sawing efficiency under extreme conditions.



Available Grade and Size

Size Grade	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)
GHD9950	*	*	*	*	*	*	*	*	*
GHD9960	*	*	*	*	*	*	*	*	*
GHD9970	*	*	*	*	*	*	*	*	*
GHD9980	*	*	*	*	*	*	*	*	*

Note: Customized specifications can be available.