



HENG FENG

CHANGSHA HENGFENG
SUPERHARD
MATERIALS CO., LTD.

We sincerely look forward to establishing long-term cooperation with you to achieve a win-win situation!

A

**COMPANY
PROFILE**



Changsha Hengfeng Superhard Materials Co.,Ltd,
founded in 2008,
which is a company specialized in
manufacturing industrial synthetic diamond powder.

The main products are: monocrystalline,
micron, resin diamond, RVD, CBN, PCD.

We have our own factory with an experienced team in R&D department
which is concentrate
on developing new products for the market demand.
A strict quality control system was established which aim at the maximum
customer satisfaction.

Committing to research, develop and innovate of superhard materials
and products, and strive to make due contributions
to the development of this industry.

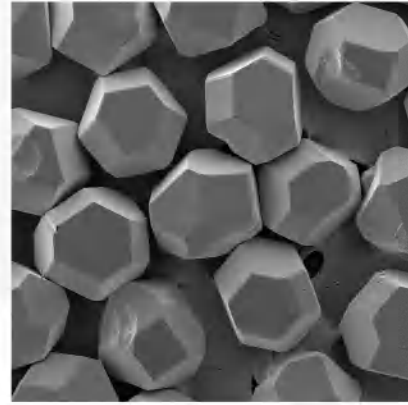
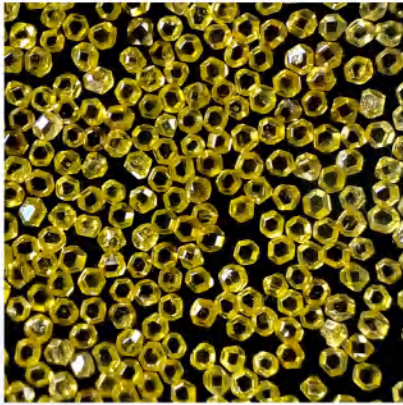
We sincerely looking forward to cooperating with you.

B

**PRODUCTS
INTRODUCTION**

HengFeng 1200 Diamond Series

HFD1200 series is designed for sawing and drilling application mainly.



HFD1290

Perfect selected cubo-octahedral crystalline shape. Outstanding diaphaneity and strength with high thermal stability. It's suitable for high hardness stone, reinforced concrete and core bits.

HFD1280

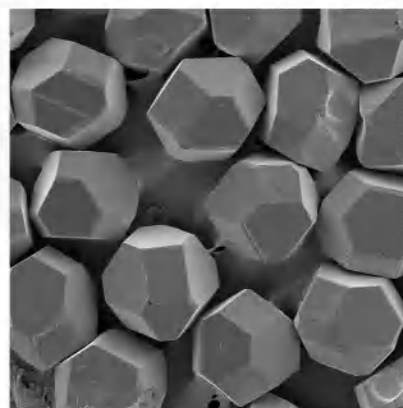
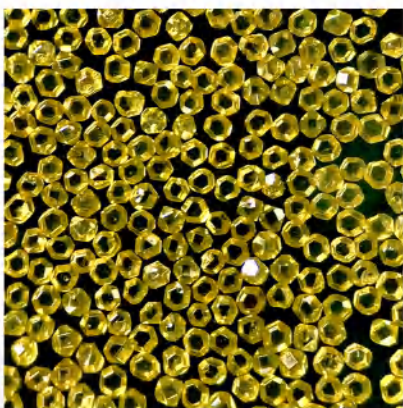
Controlled cubo-octahedral crystalline shape, high diaphaneity, strength and thermal stability. Good choice for mining, drilling, cutting which work with high load.

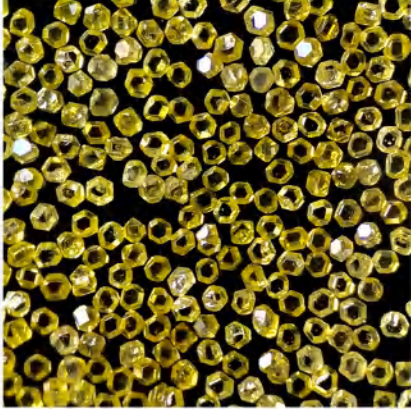
HFD1260

Complete crystalline shape, low impurities inside.
Good strength and thermal stability.
Suitable for circular saw, gang saw,
core bits with medium-high load.

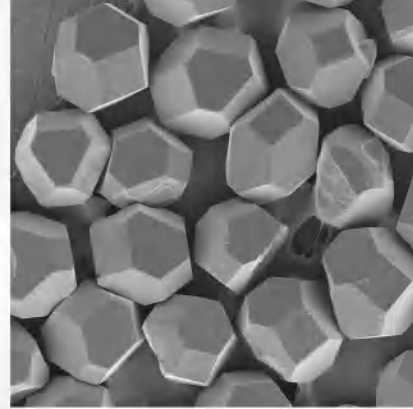
HFD1240

Comparatively regular crystalline shape.
Medium impact strength and thermal stability.
Good for circular saw and free-cutting tools
with medium load, and grinding wheels.





HFD 1230



HFD 1230

Combination of different crystalline shape,
medium strength with medium friability.

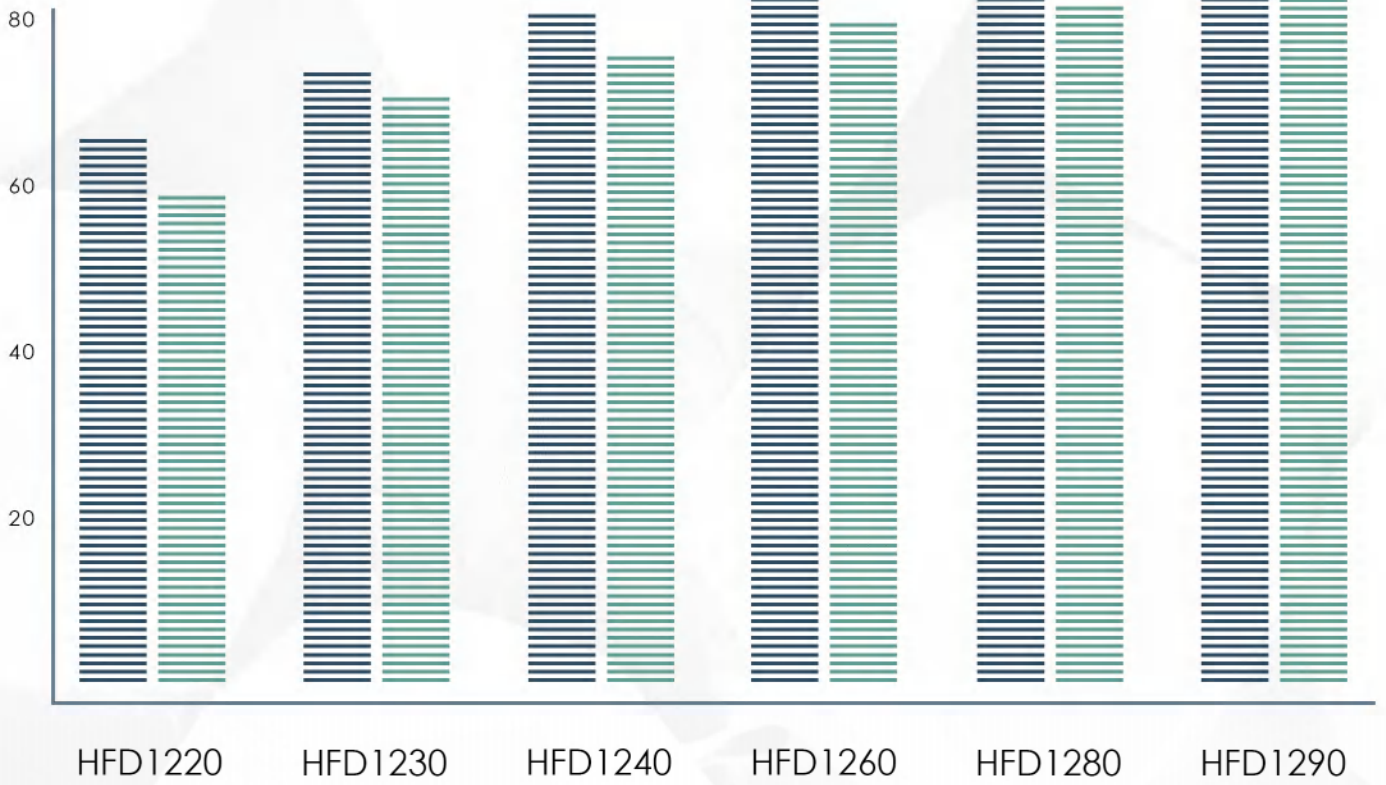
Widely be used for grinding wheels and
economical choice for cutting tools which work with medium load.

HFD 1220

Angular crystalline shape with good friability.

Easily to combine with it's bonding system.

Ideal diamond powder for cutting blades,
grinding wheels with low load.



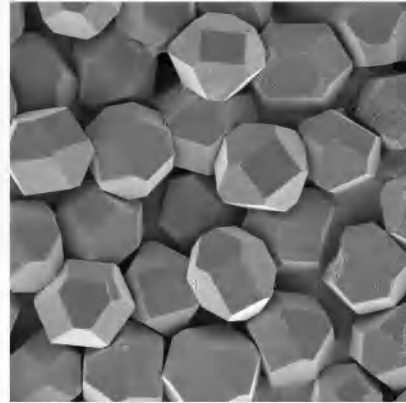
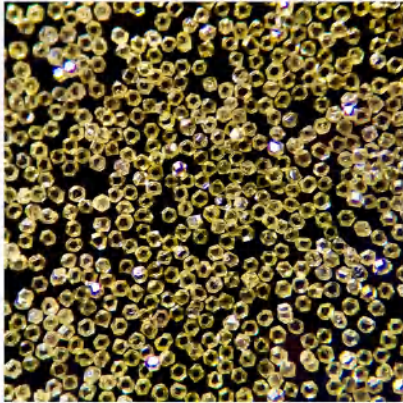
■ TI ■ TTI

Available sizes

Grade Size	HFD1290	HFD1280	HFD1260	HFD1240	HFD1230	HFD1220
16/18 (D1180)	*	*	*	*	*	*
18/20 (D1001)	*	*	*	*	*	*
20/25 (D851)	*	*	*	*	*	*
25/30 (D711)	*	*	*	*	*	*
30/35 (D601)	*	*	*	*	*	*
35/40 (D501)	*	*	*	*	*	*
40/45 (D425)	*	*	*	*	*	*
45/50 (D356)	*	*	*	*	*	*
50/60 (D301)	*	*	*	*	*	*
60/70 (D251)	*	*	*	*	*	*
70/80 (D213)	*	*	*	*	*	*

HengFeng 3200 Diamond Series

HFD3200 series is designed for cutting and grinding application mainly.



HFD3218

Perfect selected cubo-octahedral crystalline shape.
High diaphaneity, high strength and thermal stability.
Mainly used for precious application like electronics and glasses.

HFD3217

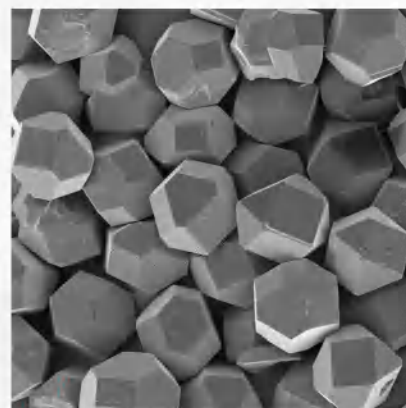
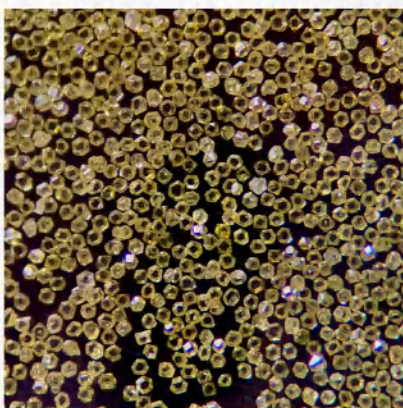
Controlled cubo-octahedral crystalline shape.
Superior strength and thermal stability.
Widely be used for ruby, sapphire,
glasses and some other applications have high requirements.

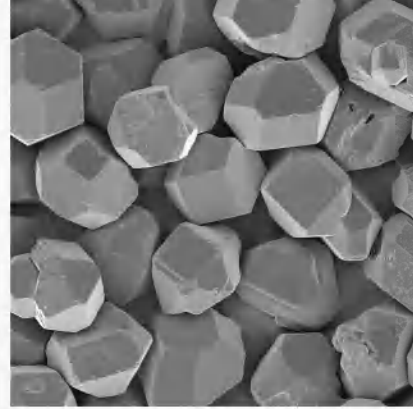
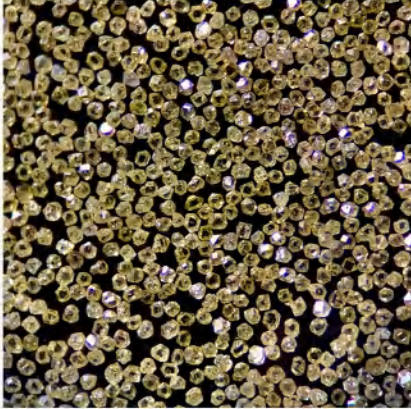
HFD3216

Well-defined crystalline shape,
medium strength and thermal stability.
Widely be used in glasses, stone,
ceramics industries and electronics application.

HFD3215

Combination of angular and cubo-octahedral
crystalline shape. Medium strength and thermal stability.
Economical choice for cutting, drilling glasses, ceramics industries.





HFD3214

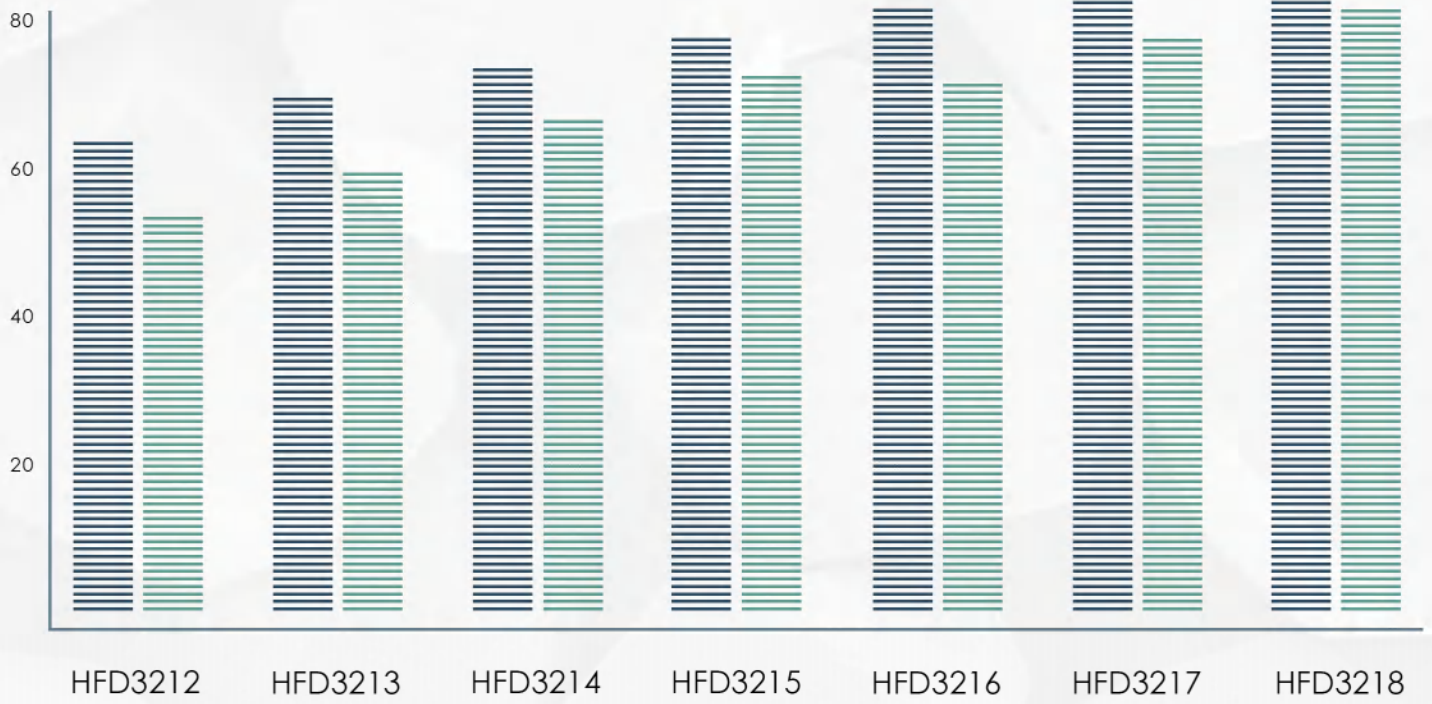
Selected crystalline shape, medium strength.
Widely be used for glasses, gems, electronic application.
Good choice for bevel polishing.

HFD3213

Broader combination of different crystalline shape.
Less strength with medium friability.
Widely be used for hard resin bond system
and soft metal bond system.

HFD3212

Incompletely crystalline shape with good friability.
Widely used for resin and vitrified bond tools
with low load like quartz and ferrite grinding.

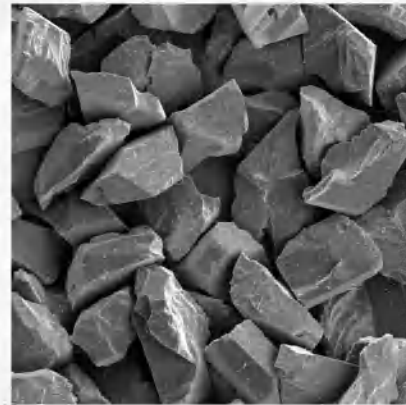
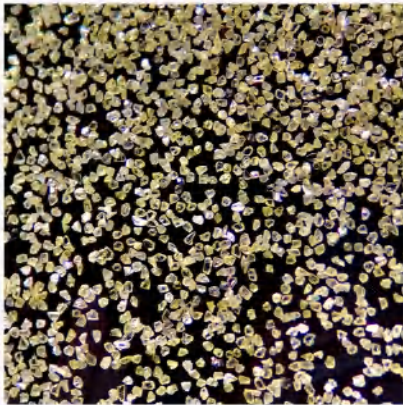


Available sizes

Grade Size	HFD3218	HFD3217	HFD3216	HFD3215	HFD3214	HFD3213	HFD3212
80/100 (D181)	*	*	*	*	*	*	*
100/120 (D151)	*	*	*	*	*	*	*
120/140 (D126)	*	*	*	*	*	*	*
140/170 (D107)	*	*	*	*	*	*	*
170/200 (D91)	*	*	*	*	*	*	*
200/230 (D76)	*	*	*	*	*	*	*
230/270 (D64)	*	*	*	*	*	*	*
270/325 (D54)	*	*	*	*	*	*	*
325/400 (D46)	*	*	*	*	*	*	*
400/500 (D45)		*	*	*	*	*	*
500/600 (D35)			*	*	*	*	*

HengFeng RVD Series

Economical choice for grinding application mainly for resin and vitrified system. Different shapes and qualities can be customized.



HFD1211

Crushed diamond with different quality of mono crystalline diamond. There are different choices of shape, angular and regular one.

Angular shape products help to increase cutting efficiency while regular shape products help to increase the life and glossiness.

HFD2210

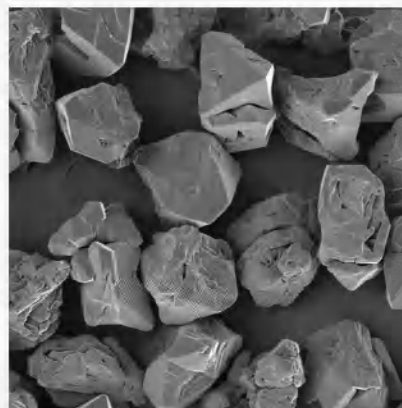
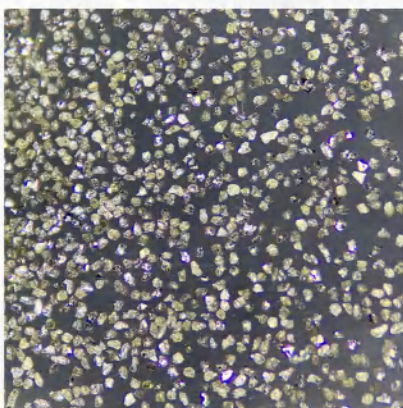
Crushed diamond with good friability diamond. Economical choice for resin bond and vitrified bond application to reduce production cost.

HFD-MPB1

Light green, semi-blocky shape.
The hardest strength Resin Diamond quality.
Widely be used for resin bond system to
process tungsten carbide,
ceramics which have heavy load and get longer life.

HFD-MPB2

Dark green, angular shape.
Perfect self-sharpen ability to improve the grinding efficiency.
Widely be used for nonferrous materials
like tungsten carbide, stone, ceramic, glasses and other materials.

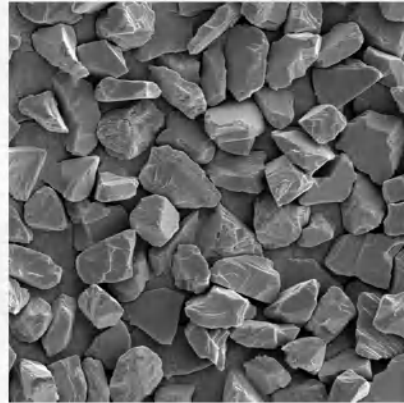
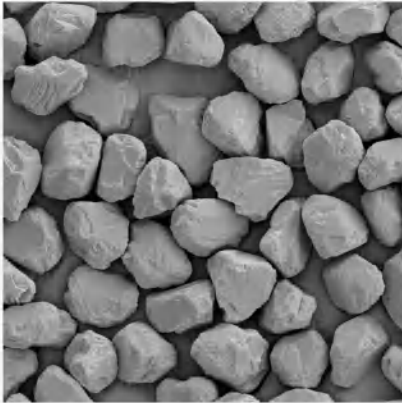


Available sizes

Grade Size	HFD1211	HFD2210	HFDMPB1	HFDMPB2
40/45 (D425)	*			
45/50 (D356)	*			
50/60 (D301)	*	*	*	*
60/70 (D251)	*	*	*	*
70/80 (D213)	*	*	*	*
80/100 (D181)	*	*	*	*
100/120 (D151)	*	*	*	*
120/140 (D126)	*	*	*	*
140/170 (D107)	*	*	*	*
170/200 (D91)	*	*	*	*
200/230 (D76)	*	*	*	*
230/270 (D64)	*	*	*	*
270/325 (D54)	*	*	*	*
325/400 (D46)	*	*	*	*
400/500 (D45)	*	*	*	*
500/600 (D35)	*	*	*	*

HengFeng Micron Diamond Series

Choosing different raw material and particle size distribution (PSD) is controlled to meet different application requirements. Selected qualities and special PSD can be customized.



HFD-MP30

Select good strength diamond for production, in yellow color. Blocky shape with excellent PSD, perfect decentrality. Mainly used for metal bond applications which have high requirements for strength and narrow PSD like diamond wire, PCD and other precious tools.

HFD-MP20

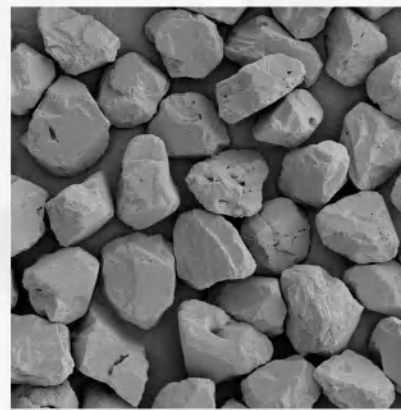
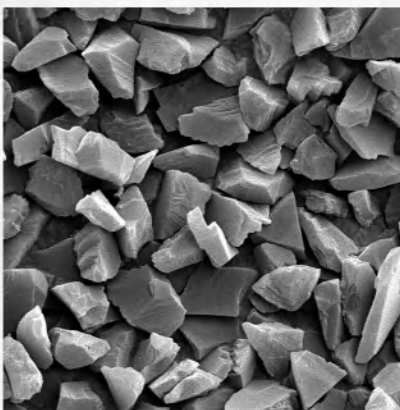
Semi-blocky shape, with medium strength and thermal stability. It had good PSD. Mainly be used for resin, vitrified and metal bond system to process tungsten carbide, gems, optical glasses and other materials.

HFD-MP10

Angular shape, with low strength and thermal stability. It has standard PSD. Grinding and polishing efficiency are good with good friability. Mainly be used for resin and vitrified bond to process stone, ceramic, gems and other materials.

HFD-MPBM

Grey to dark color. Semi-blocky shape. Crushed by resin diamond. It has good self-sharpen ability. Widely be used for resin bond system to grind and polish stone, tungsten carbide, gems, ferrite and other materials.



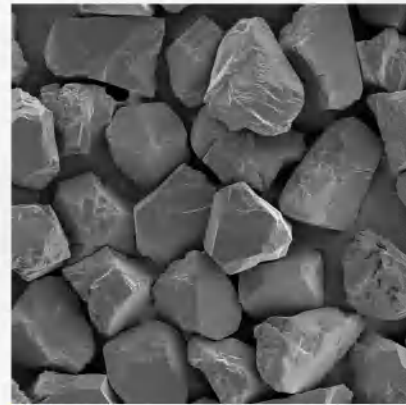
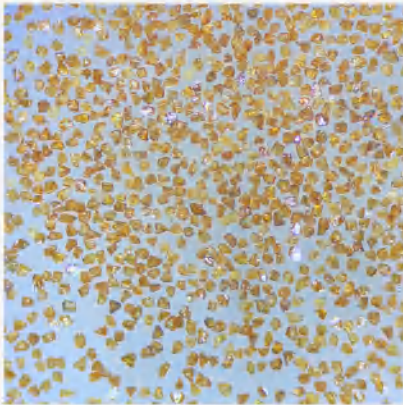
Available sizes

Standard size	Equivalent Size	Size Distribution D50(μm)	HFD-MP30	HFD-MP20	HFD-MP10	HFD-MPBM
0-0.25	60000#	0.11-0.2	*	*		
0-0.5	30000#	0.20-0.3	*	*		*
0-1	15000#	0.6-0.8	*	*	*	*
0-2	13000#	0.9-1.0	*	*	*	*
1-2	12000#	1.1-1.3	*	*	*	*
1-3	10000#	1.6-1.8	*	*	*	*
2-4	6000#	2.6-3.0	*	*	*	*
3-6	4000#	3.5-4.2	*	*	*	*
4-8	3000#	5.0-6.0	*	*	*	*
5-10	2000#	6.5-7.3	*	*	*	*
6-12	1800#	7.3-8.3	*	*	*	*
7-14	1500#	9.1-10.5	*	*	*	*
8-16	1300#	10.0-12.0	*	*	*	*
10-20	1200#	12.5-15.0	*	*	*	*
12-22	1000#	15.0-17.0	*	*	*	*
15-25	800#	18.0-20.0	*	*	*	*
20-30	700#	20.0-23.0	*	*	*	*
22-36	600#	23.0-26.0	*	*	*	*
20-40	500#	26.0-29.0	*	*	*	*
30-40	450#	29.0-32.0	*	*	*	*
35-45	400#	32.0-36.0	*	*	*	*

*Special PSD can be customized with your requirements.

HengFeng CBN Series

CBN as a superhard material and better thermal stability material than diamond powder, it's widely used for high temperature environment and processing ferrous materials.



HFD-C60

Golden color, with regular shape and good diaphaneity. Outstanding strength and thermal stability among CBN series. Widely be used in metal bond systems and electroplated application. The quality of CBN can help tools with excellent cutting, grinding efficiency and life.

HFD-C50

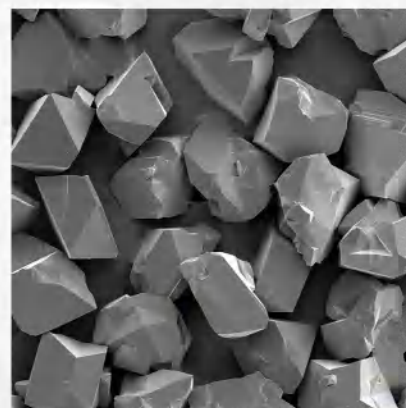
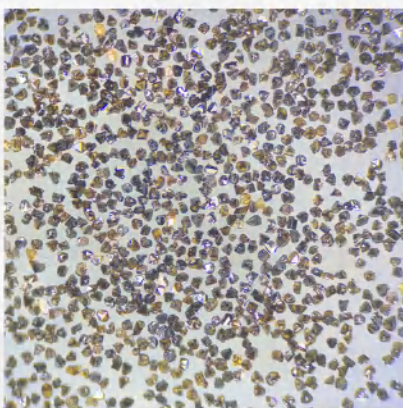
Dark brown, complete blocky shape, semi-diaphaneity high strength and thermal stability. It's mainly used in metal bond and electroplated tools.

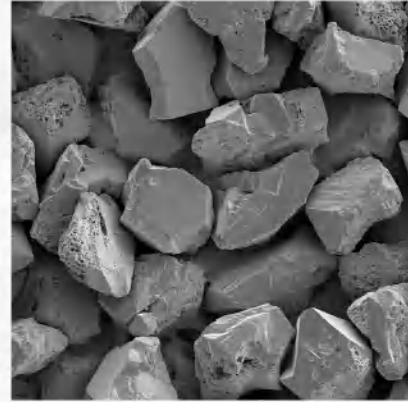
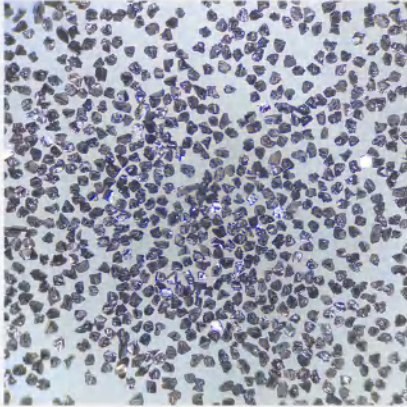
HFD-C40

Dark brown, angular shape,
medium strength and high thermal stability.
Widely be used for resin, vitrified and metal bond application.

HFD-C20

Black color, semi-blocky shape,
good strength and thermal stability.
It help to maintain tools' life and their grinding efficiency.
It's mainly used for vitrified and metal bond application.



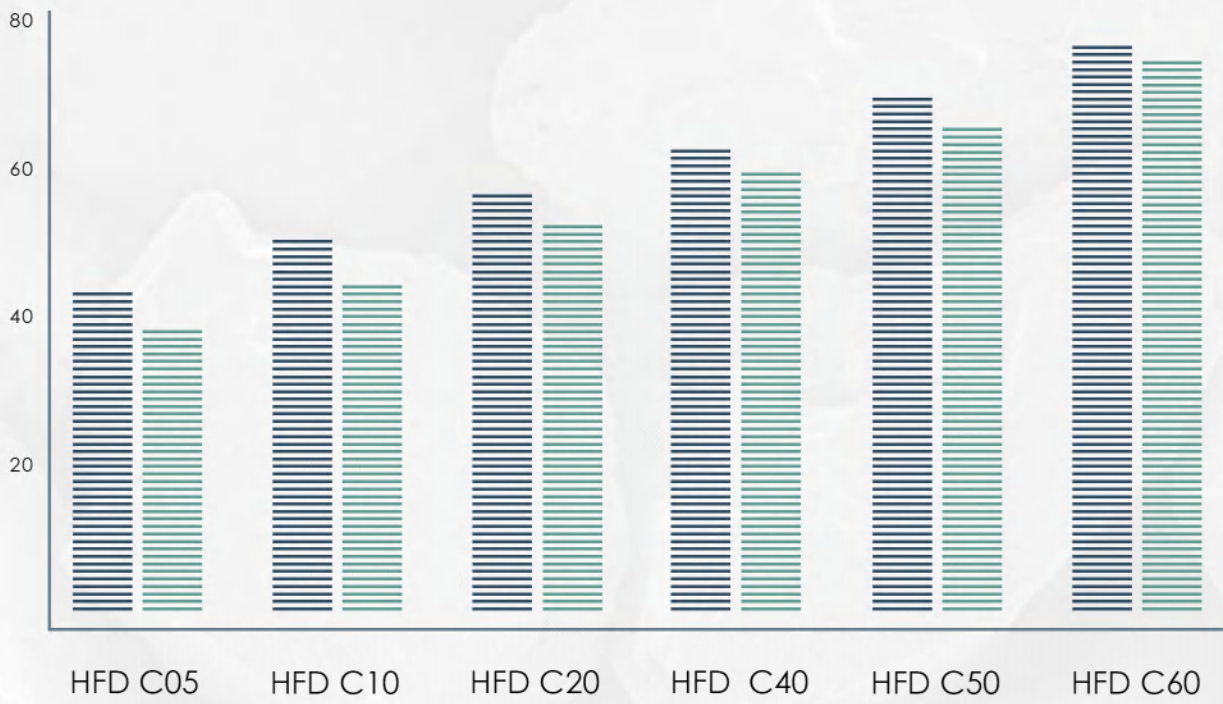


HFD-C10

Black color, combination of blocky and angular shape, medium strength. With good grinding efficiency .
Mainly be used in resin bond and vitrified bond applications like automobiles and aerospace.

HFD-C05

Black color, angular shape with good friability. Good self-sharpen ability. Mainly used for resin bond systems and low temperature grinding application like grinding wheels.



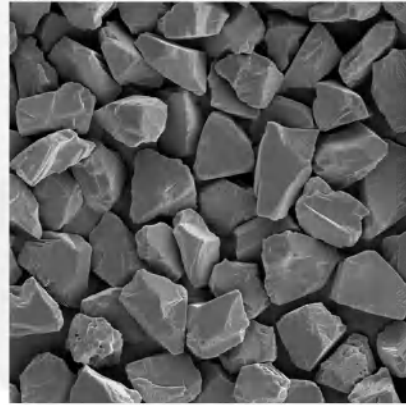
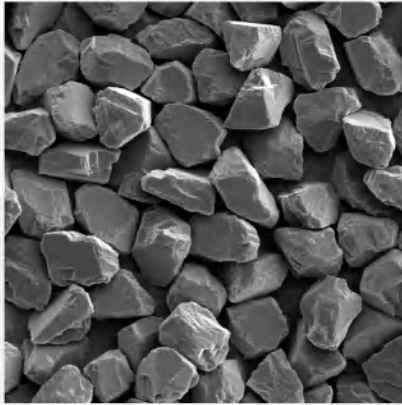
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Available sizes

Grade Size	HFD-C60	HFD-C50	HFD-C40	HFD-C20	HFD-C10	HFD-C05
40/50 (B427)		*	*			
50/60 (B301)	*	*	*			
60/80 (B252)	*	*	*	*	*	*
80/100 (B181)	*	*	*	*	*	*
100/120 (B151)	*	*	*	*	*	*
120/140 (B126)	*	*	*	*	*	*
140/170 (B107)	*	*	*	*	*	*
170/200 (B91)	*	*	*	*	*	*
200/230 (B76)	*	*	*	*	*	*
230/270 (B64)	*	*	*	*	*	*
270/325 (B54)	*	*	*	*	*	*
325/400 (B46)	*	*	*	*	*	*

HengFeng CBN micron powder

CBN as a superhard material and better thermal stability material than diamond powder, it's widely used for high temperature environment and processing ferrous materials.



HFD-CM2

Brown color, high thermal stability and self-sharpen ability. Which is the best CBN micron powder from us. Widely be used for vitrified bond wheel to process shafts like camshaft and good choice for making PCBN.

HFD-CM1

Black color, angular shape with good self-sharpen ability. With good thermal stability for low and medium temperature environment. Ideal for efficient grinding, ferrous polishing and sintering application.

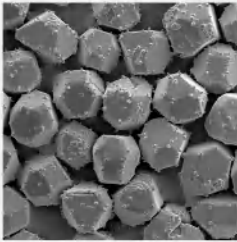
Available sizes

Standard size	Equivalent Size	Size Distribution D50(μm)	HFD-CM2	HFD-CM1
0-0.25	60000#	0.11-0.2		
0-0.5	30000#	0.20-0.3	*	*
0-1	15000#	0.6-0.8	*	*
0-2	13000#	0.9-1.0	*	*
1-2	12000#	1.1-1.3	*	*
1-3	10000#	1.6-1.8	*	*
2-4	6000#	2.6-3.0	*	*
3-6	4000#	3.5-4.2	*	*
4-8	3000#	5.0-6.0	*	*
5-10	2000#	6.5-7.3	*	*
6-12	1800#	7.3-8.3	*	*
7-14	1500#	9.1-10.5	*	*
8-16	1300#	10.0-12.0	*	*
10-20	1200#	12.5-15.0	*	*
12-22	1000#	15.0-17.0	*	*
15-25	800#	18.0-20.0	*	*
20-30	700#	20.0-23.0	*	*
22-36	600#	23.0-26.0	*	*
20-40	500#	26.0-29.0	*	*
30-40	450#	29.0-32.0	*	*
35-45	400#	32.0-36.0	*	*

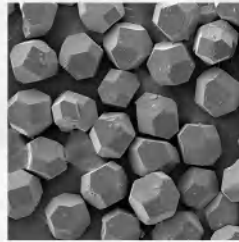
*Special PSD can be customized with your requirements.

HengFeng Coated Diamond & CBN Series

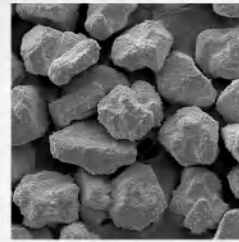
Coated diamond is used for improving the using efficiency of diamond powder with bonding system.



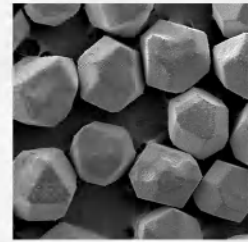
Nickel coated



Titanium coated



Copper coated



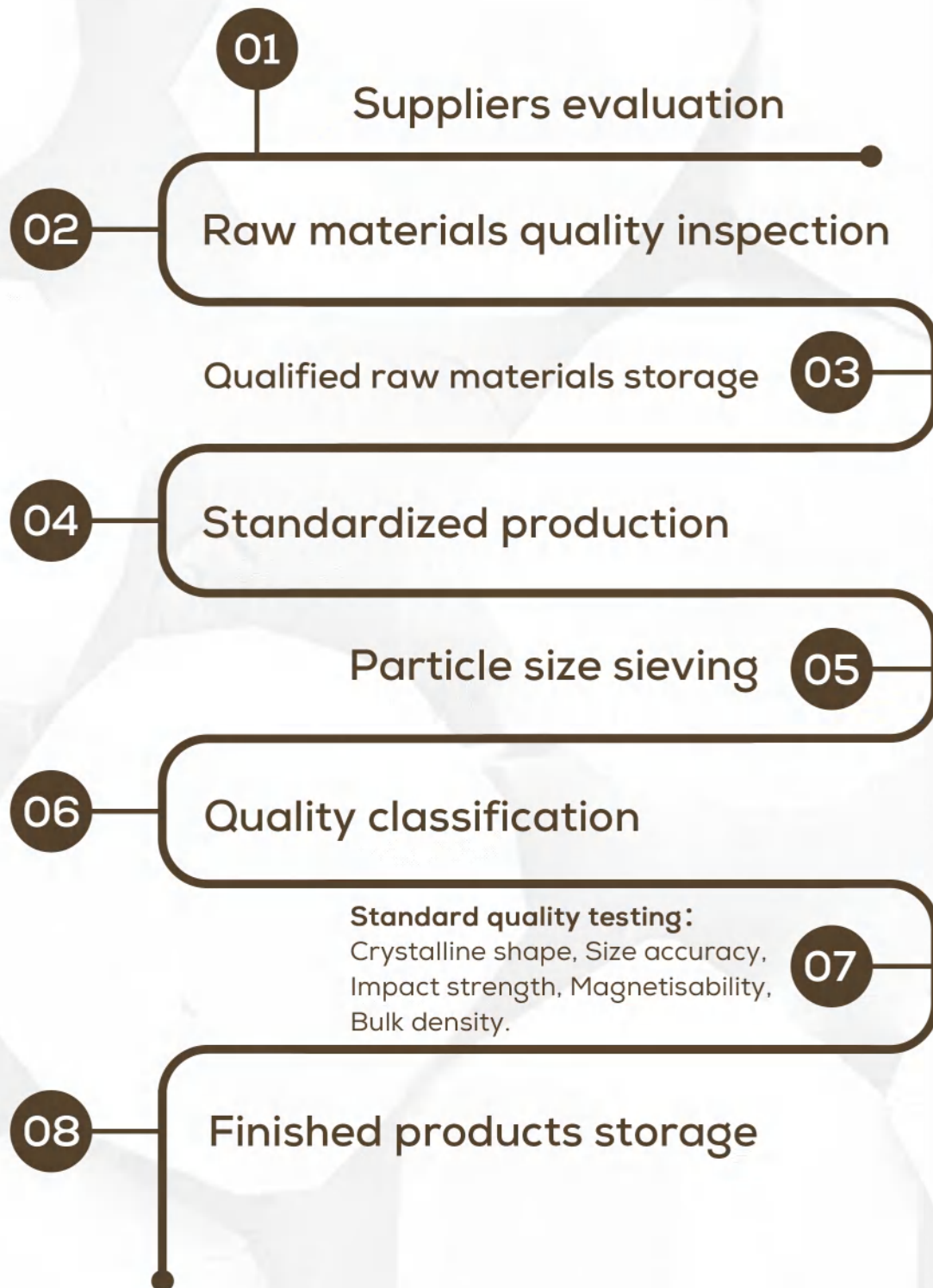
Combined coated

	Coating Way	Weight Increase	Available sizes	Advantage
1	Nickel coated	30%-60%	16/18 to 5-10 μ	<ol style="list-style-type: none"> 1. Bonding retention increasing 2. Increase strength of diamond, together with it's using period 3. Better thermal ability of diamond
2	Titanium coated	1%	16/18 to 5-10 μ	<ol style="list-style-type: none"> 1. Increase holding force of bond and diamond 2. Increase diamond strength, together with using period 3. Better thermal ability of diamond
3	Copper coated	30%-60%	16/18 to 5-10 μ	<ol style="list-style-type: none"> 1. Mainly for dry and resin grinding application 2. Increase diamond strength and diamond work time) 3. Better thermal ability of diamond 4. Better electrical conductivity
4	Combined coated (TI NI)	30%-60%	16/18 to 5-10 μ	<ol style="list-style-type: none"> 1. Outstanding holding force of bond and diamond 2. Increase strength of diamond, together with it's using period 3. Superior improvement of thermal ability for diamond

C

**FLOW
CHART**

Quality control process



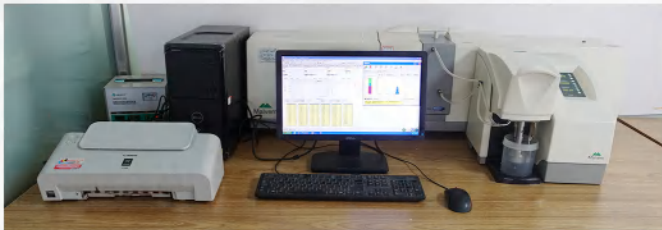
D

**EQUIPMENT
FIGURE**



— **Furnace** —

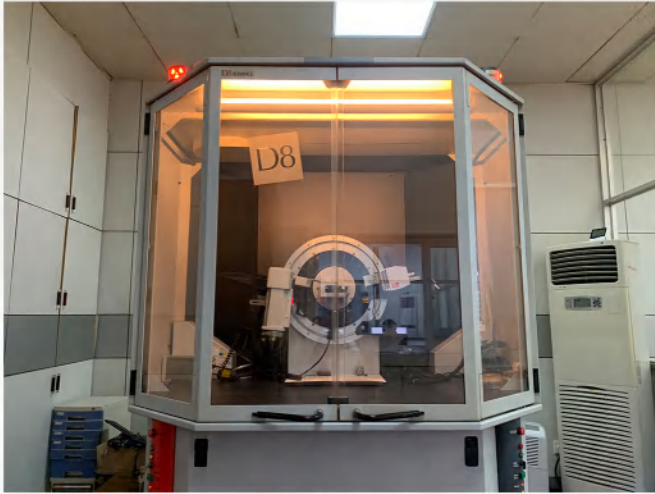
— **Impact testing machine** —



— **Malvern** —

— **Micronscope** —





— X-Ray Diffractometer —

— Susceptibility analyzer —



— SEM —



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