宏崴實業有限公司
HONWAY MATERIALS CO., LTD.

半導體 耗材
Semiconductor consumables Catalogue

DIAMOND **MICRON POWDER**

(NANO) DIAMOND **SLURRY**

AlO2/CeO2/SiC **SLURRY**

DIAMOND **DICING BALE**

DIAMOND **SUBSTRATE**

宏崴實業有限公司
HONWAY MATERIALS CO., LTD.

目錄

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拋光耗材對應參考

Reference Table

宏崴實業有限公司
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產品名稱 Product name		半導體材料 Semiconductor				電子材料 Electronic material			金屬材料 Metallic	
種類 Type	分類 Grade	Bare	GaAs	GaP	InP	$LiNbO_3$	Sapphire	Crystal	Hard metal	Soft metal
鑽石粉	Dia-P						●		●	
碳化矽	GC,C	●					●	●	●	
氧化鋁	WA,A	●	●	●	●	●		●		●
石榴粉	GW		●	●	●					●
鑽石拋光液	DP senes						●		●	
氧化鈰粉	CP senes									
	SP senes									
	OP senes									
氧化鋁拋光液	Metal senes								●	●
	Crystal senes	●				●	●	●		
氧化鋁拋光液	Platic senes									
	Metal senes		●	●	●				●	●
拋光墊	Cerium Pad								●	●
	Mout Pad									
	W series	●					●	●		●
	B series	●	●	●	●	●			●	

產品名稱 Product name		陶瓷材料 Ceramices			塑膠材料 Plastic		玻璃材料 Glass		
種類 Type	分類 Grade	Barium Titanate	Alumina ceramics	Sic ceramics	Plastic materials	Plastic lens	Optical lens	Optical glass	LCD glass
鑽石粉	Dia-P	●	●	●					
碳化矽	GC,C	●	●	●			●	●	●
氧化鋁	WA,A				●	●	●	●	●
石榴粉	GW						●	●	●
鑽石拋光液	DP senes	●	●	●					
氧化鈰粉	CP senes								●
	SP senes							●	
	OP senes						●		
氧化鋁拋光液	Metal senes								
	Crystal senes	●	●	●				●	●
氧化鋁拋光液	Platic senes								
	Metal senes								
拋光墊	Cerium Pad	●	●	●			●	●	●
	Mout Pad							●	●
	W series							●	
	B series	●	●	●	●	●	●	●	●

宏崴實業有限公司
HONWAY MATERIALS CO., LTD.

鑽石粒度規格表

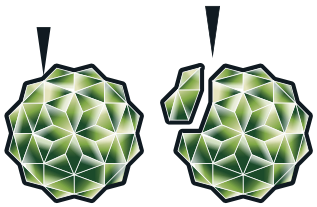
Diamond Grit Size Chart

規格		顏色	應用
番號No.	顆粒尺寸(μm)	Color	Applications
#300000	0.05 (0-0.1)	紅·金色Red·Golden	超精密拋光 Ultra-precision polishing
#140000	0.1 (0-0.25)	藍·金色Blue·Golden	
#60000	0.25 (0-0.5)	金色Golden	
#28000	0.5 (0-1)	灰色Grey	超鏡面拋光 Precision finishing
#14000	1 (0-2)	白色White	
#8000	3 (2-4)	黃色Yellow	
#5000	4.5 (3-6)	淺棕色Light Brown	精密度拋光 Finishing
#3000	6 (4-8)	橙色Orange	
#2000	8 (5-10)	淺紫色Light Purple	
#1800	9 (6-12)	綠色Green	
#1500	13 (10-16)	粉紅色Pink	一般亮度用 Pre-polish lapping /Preparetory
#1200	15 (10-20)	藍色Blue	
#1000	17.5 (15-20)	深綠色Dark Green	
#800	25 (20-30)	咖啡色Brown	
#600	35 (30-40)	紅色Red	粗拋研削 Stock removal
#400	45 (40-50)	紫色Purple	
#200	55 (50-60)	黑色Black	

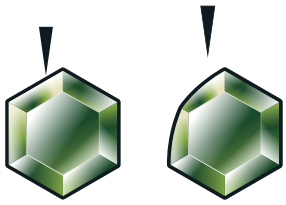
以上為非規格品

詳細內容歡迎來電或洽詢現場業務人員

Diamond Grit Size Chart



多晶 Polycrystalline



單晶 Monocrystalline

Differences
Polycrystalline diamond consists of numerous small grains in a random structure. This gives the toughness in all directions resulting in less surface damage.
*Ultra Fast Polishing
*Better Surface Finishes
*Self Sharpening Particles

- 相同粒號、工件材質、機器參數，多晶能更快實現理想拋光表面。
- 多晶鑽石微粉：球形多面體，銳口小。拋光時會逐漸崩裂成更小的晶體，產生新的銳口提供穩定的研磨力，表面細緻。
- 單晶鑽石微粉：晶體結構穩定、結晶面少、銳口深，容易造成表面產生較深的刮痕。拋光時單晶會逐漸鈍化，需要較長的研磨時間。
- 極大壓力下單晶較容易使工件內部殘存應力。

多晶/單晶鑽石粉/膏/液

Diamond Micron Powder/Compound/Slurry

宏崴實業有限公司
HONWAY MATERIALS CO., LTD.

多晶/單晶鑽石膏 DIAMOND COMPOUND

Polycrystalline / Monocrystalline Diamond Compound

DIAMOND SLURRY

鑽石拋光液

鑽石膏説明
標準規格品為油溶性5公克，若需水溶性鑽石膏，請指明訂購。
Oil based, 5gram syringe is standard spec, custom package is also available upon request.
可使用在珠寶首飾及寶石，鋼鐵和硬金屬，鋁，鋅，冶金等材質上，
不建議使用在有鍍膜或有漆的表面上。
Can use on jewellery, gemstone, steel, hard metal,aluminium & zinc,
and all metallurgical purpose, not suitable for coating surface.

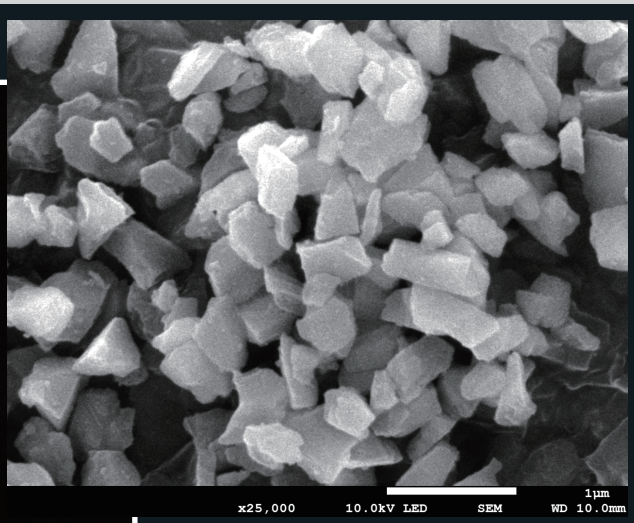
Polycrystalline Diamond Micron Powder 多晶鑽石粉

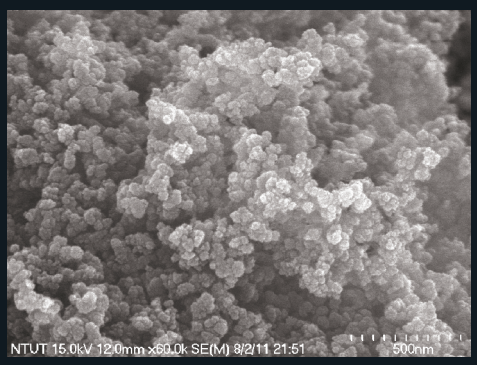
Monocrystalline Diamond Micron Powder 單晶鑽石粉

奈米鑽石粉/膏/拋光液

Ultradispersed/Nanodiamonds/Powder/Paste/Slurry

NANO DIAMOND SLURRY 奈米鑽石拋光液





規格	
番號No.	顆粒尺寸(nm)
#500000	30
#300000	50
#150000	100
#50000	300
#30000	500
#20000	800
#15000	1000

球狀奈米鑽石微粉(Spherical Nano-diamond Powder)

球狀奈米鑽石微粉是在超高壓高溫下合成的多晶顆粒，微晶尺寸僅3-10奈米，韌性良好。其結構類似天然黑鑽(Carbonado)，能提供比傳統單晶微粉更細緻的研磨拋光效果。

Spherical nano-diamond powder is a tough, polycrystalline material synthesized under extreme high pressure and heat. With a microcrystalline size of only 3-10 nm, its structure is similar to natural Carbonado, providing finer polishing performance than conventional monocrystalline powders.

球狀奈米鑽石製造工藝簡介(Manufacturing process introduction)

- 合成：在特定條件下，使優質石墨轉化為球狀奈米鑽石。
- 處理：透過萃取等方式，去除殘留的石墨及其他雜質。
- 分級：特殊分級技術，將混合微粉分成不同粒徑的分散體。
- 後處理：通過沉降、乾燥、包裝等作業完成。
- Synthesis: Converts graphite into spherical nano-diamonds.
- Purification: Removes impurities via extraction.
- Grading: Separates the powder into different particle sizes.
- Post-processing: Includes sedimentation, drying, and packaging.

結構特點(Structural feature)

這種超細鑽石微粉呈各向同性，無解理面，比單晶鑽石更不易脆裂。

This ultrafine diamond powder is isotropic with no cleavage planes, making it less prone to brittle fracture than monocrystalline diamonds.

性能特點(Feature)

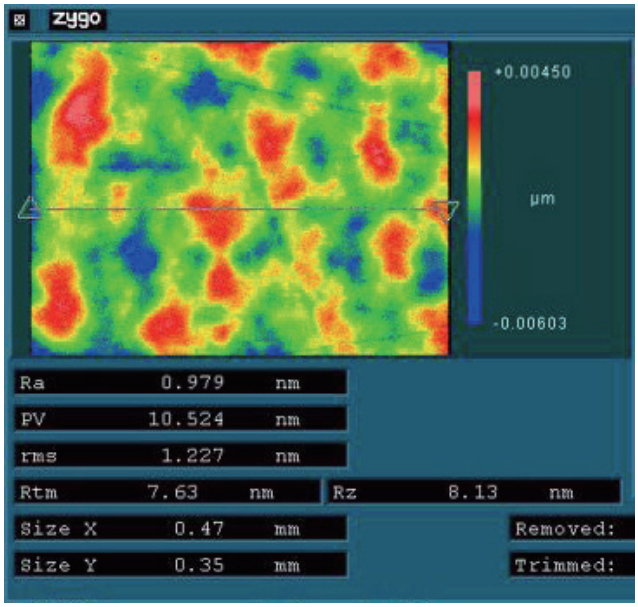
1. 使用壽命比較長。
2. 研磨過程中伴隨有奈米晶粒脫落，具有自銳性能。
3. 研磨拋光過程中沒有脆性斷裂，不易劃傷工件表面。

1. Longer service life.
2. Self-sharpening due to the shedding of nano-grains during grinding.
3. Doesn't cause scratches on the workpiece as it doesn't undergo brittle fracture during polishing.

主要用途(Application)

晶圓、超精密模具、寶石、陶瓷以及合金的奈米級以及Å埃級(奈米級以下)表面拋光。

Nanometer- and Ångström-level (sub-nanometer) surface polishing for wafers, ultra-precision molds, gemstones, ceramics, and alloys.



氧化鋁（鈰）拋光粉/膏/液
二氧化矽拋光液

宏崴實業有限公司
HONWAY MATERIALS CO., LTD.

Aluminum/CeO2/SiO2 Oxide Powder/Paste/Slurry

氧化鋁拋光膏/粉/液 (Al Polishing Paste/Powder/Slurry)

氧化鋁拋光膏 Alumina Polishing Paste

適用範圍(Scope of Application):
適用於金屬、精密模具、藍寶石、鋁合金、陶瓷等材料的最終拋光，推薦在一般鑽石膏拋光後的表面清潔，球狀氧化鋁能修復拋痕，且成本低廉。建議使用與鑽石膏相同或更細的粒度。如需更高規格的拋光效果，建議選用奈米鑽石系列產品。

This product is for the final polishing of metals, precision molds, sapphires, aluminum alloys, and ceramics. It's recommended using the low-cost spherical aluminum oxide after diamond paste to repair scratches. Use the same or finer grit size as the diamond paste. For higher-level polishing, use our nano-diamond products.

顏色 (color)	顆粒尺寸 (um)
黃色 Yellow	0.3
蒂芬尼綠 Tiffany	0.5
紫色 Purple	1
紅色 Red	3

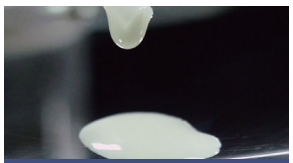
氧化鋁拋光粉/液 Alumina Powder / Alumina Polishing Slurry

氧化鋁拋光液(Slurry)

氧化鋁拋光粉(Powder)

番號 No.	顆粒尺寸 (μm)	應用 Application	氧化鋁拋光粉 Powder	氧化鋁拋光液 Polishing Slurry
#300000	0.05	超精密拋光 Ultra-precision polishing	●	●
#60000	0.3		●	●
#28000	0.5	超鏡面拋光 Precision finishing	●	●
#14000	1		●	●
#8000	3		●	●
#3000	5	精密度拋光 Finishing	●	●

氧化鈰拋光粉/液 (CeO_2 Polishing Powder/Slurry)



氧化鈰拋光液(Slurry)

氧化鈰拋光粉(Powder)

適用範圍(Scope of Application):
本產品為兩性物質，不溶於鹼，能在鹼性條件下與鹼配合，發揮良好拋光效果。其懸浮性佳且易於清理，適用於精密光學元件、晶體、藍寶石、矽晶圓及積體電路製造中需要高速去除二氧化矽的拋光製程。

This product is an amphoteric substance, insoluble in alkali, and works well with alkaline conditions for effective polishing. It has good suspension and is easy to clean. It's suitable for the high-speed removal of silicon dioxide in polishing processes for precision optical components, crystals, sapphires, silicon wafers, and integrated circuit manufacturing.

產品型號 Model	產品狀態 Product Status	顆粒尺寸 (um) Grit size	適用範圍(Scope of Application)				
			一般青玻璃 General blue glass	白板光學玻璃 Whiteboard optical glass	面板玻璃 Panel glass	光學元件 Optical components	藍玻璃 Blue glass
RA-05	白色粉末狀/液 White powder/slurry	D50/0.5			●	●	
RA-10	白色粉末狀/液 White powder/slurry	D50/0.8			●	●	
RA-08	白色粉末狀/液 White powder/slurry	D50/1.0		●	●	●	
RA-01	白色粉末狀/液 White powder/slurry	D50/1.5	●	●	●		
RA-12	白色粉末狀/液 White powder/slurry	D50/2.0	●				
HAT-1205	紅色粉末狀/液 Red powder/slurry	D50/1.2				●	●
HAT-1805	紅色粉末狀/液 Red powder/slurry	D50/1.8	●	●			
RGB-1935	拋光液 Slurry	D50/0.5				●	●
RGB-1938	拋光液 Slurry	D50/0.8				●	●

二氧化矽拋光液 (SiO_2 Polishing Slurry)

適用範圍(Scope of Application)：
SO-80 是專為 LiTaO3、LiNbO3、藍寶石等電子材料基底、金屬材料及陶瓷的拋光而開發的高純度膠態二氧化矽拋光液。顆粒的均勻性、分散性好，能高效的獲得無損傷的研磨拋光面。

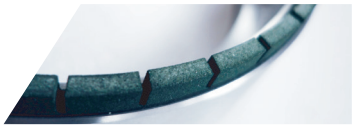
SO-80 is a high-purity colloidal silica polishing slurry for LiTaO3, LiNbO3, sapphire, and other electronic materials, metals, and ceramics. Its uniform particles provide an efficient, damage-free polish surface.

產品型號 Model	產品狀態 Product Status	顆粒尺寸 (um) Grit size	適用範圍 Application
SO-80	拋光液 Slurry	0.08	藍寶石 CaF2 BGO LiTaO3 LiNbO3

鑽石晶圓研磨砂輪

Diamond Grinding Wheels

1. 獨特的結合劑設計保證製作工藝提供穩定的切削力。
2. 良好的自銳性，有效降低研磨阻力, 減少破片風險。
4. 通過在地化生產，我們可以提供高性價比的產品。



訂購砂輪時請指明下列事項：

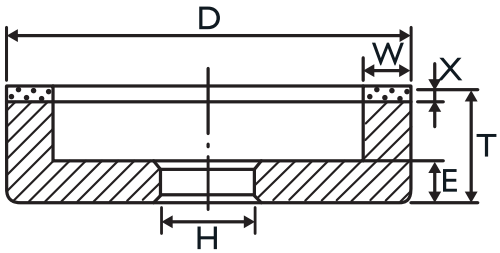
1. 砂輪之形狀及各部尺寸：如 6A2、6A9
2. 磨料種料：鑽石或氮化硼
3. 粒度：例如：#150
4. 集中度：例如：C-75
5. 結合劑：例如：樹脂結合劑或金屬結合劑
6. 冷卻方式：乾磨或濕磨
7. 數量及交期：
8. 轉速及加工條件：
9. 多數製造商都會在砂輪上標示以下資訊：

When ordering, please specify：

1. Shape & dimensions of wheel：Ex. 6A2, 6A9
2. Abrasive：Diamond or CBN
3. Grit size：Ex. #150
4. Concentration：Ex. C-75
5. Bond of wheel：Ex. Resin bond or Metal bond
6. Coolant：Dry or Wet grinding
7. Quantity & Lead time：
8. Spindle speed & grinding conditions：
9. Marking information: (as per manufacturer standards)

SDC 磨料種類 Abrasive	150 粒度 Grit Size	N 結合度 Grade	75 集中度 Concentration	R 結合劑 Bond	3.0 磨料層厚度 Rim thickness
D：天然鑽石 Natural diamond SD：人造鑽石 Synthetic diamond	#60 #80 #100 #150 #200 #270 #325 #400 #600 ：	J 軟Soft L N P R 硬Hard	25 50 75 100 125 150	R：樹脂結合 Resin bond V：陶瓷法 Vitrified	1.0mm 1.5mm 2.0mm 3.0mm 5.0mm 10.0mm ：

6A2



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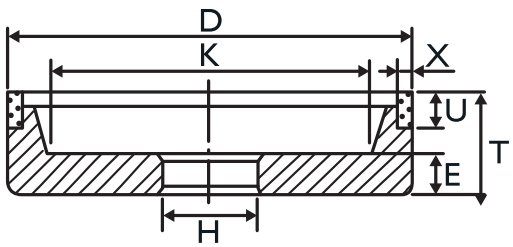
6A9



__D-__H-__K-__T-__E-__X-__U #__

砂輪訂製方法 How to order a wheel?

1.若是重覆訂製, 請告知工作單編號即可 For repeated order, just tell us the manufacturing number.
2.若需我們為您設計砂輪, 則請告知 If you require us to design the wheels for you, please specify :
 a.工件名稱, 材質, 硬度 Name, materials, hardness of work-piece.
 b.機器名稱, 型式, 轉速及馬力 Name, type, horse power, spindle speed of machine.
 c.加工條件及加工精度 Grinding conditions.
3.若自行設計砂輪, 則告知如下例: If you have your own design, please order as below :
 6A1, 350D-10W-5X-25T-127H, SDC 150N75R5.0

鑽石划片刀

Diamond Dicing Blade/Hub Blade

划片刀 Dicing Blade/Hub Blade

HWD25系列硬刀具有加工高精度，切縫小的特點，適用矽晶圓氧化物晶圓和碳化矽、砷化鎵、磷化鎵等各種化合物晶圓。

HWD25-series hard blades are designed for high-precision processing. They feature a narrow kerf, making them suitable for various wafers, including Silicon Wafer, Oxide Wafer,SiC, GaAs, and GaP.

刀刃露出量 Blade exposure	切縫寬度(μm) Slit width(μm)	粒度(目數) Grit size		結合劑 Bond	濃度(體積濃度) Volume concentration
Z 250-380	Z 11-15	1000 1500 1700 1800 2000 2500	3000 3500 4000 4500 4800 5000	Ⓢ 鋒利型 (Sharp) Ⓝ 通用型 (Normal) Ⓗ 高強型 (High Strength)	50 70 90 110 130
A 380-510	A 16-20				
B 510-640	B 20-25				
C 640-760	C 25-30				
D 760-890	D 30-35				
E 890-1020	E 35-40				
F 1020-1150	F 40-50				
G 1150-1270	G 50-60				

HWS25系列硬刀，耐磨性好，刀刃穩定性較好，能有效控制晶片顆粒側面台階，保證顆粒尺寸，適用於陶瓷LED基板、半導體封裝基板和PZT、TGG等硬脆材質。

HWS25-series hard blades provide excellent wear resistance and blade stability. They are ideal for hard and brittle materials like ceramic substrates, PZT, and TGG, ensuring precise particle size.

外徑(mm) Outer diameter	露出量(mm) Exposure (0/+0.2)		厚度公差(mm) Thickness tolerance	厚度(mm) Thickness		粒度 Grit size	結合劑 Bond	體積濃度 Volume concentration	開槽(個) Number of slots
56 58	2.0 2.2 2.4 2.6 2.8 3.0 3.2	3.4 3.6 3.8 4.0 4.2 4.4 4.6	A ±0.005 B ±0.010 C ±0.015	0.06 0.08 0.10 0.12 0.14 0.16 0.18	0.20 0.22 0.24 0.26 0.28 0.30 0.32	340 400 500 600 800 1000 1200	Ⓢ 鋒利型 (Sharp) Ⓝ 通用型 (Normal) Ⓗ 高強型 (High Strength)	30 50 70 90 110 130 150	S16 (16 slots) S32 (32 slots) S48 (48 slots)

HWES25系列軟刀，切切速度可達200mm/s，壽命高達7000m以上，適用於PCB基板、EMC基板、Chip LED基板和 LTCC、PZT、TGG等硬脆材料。

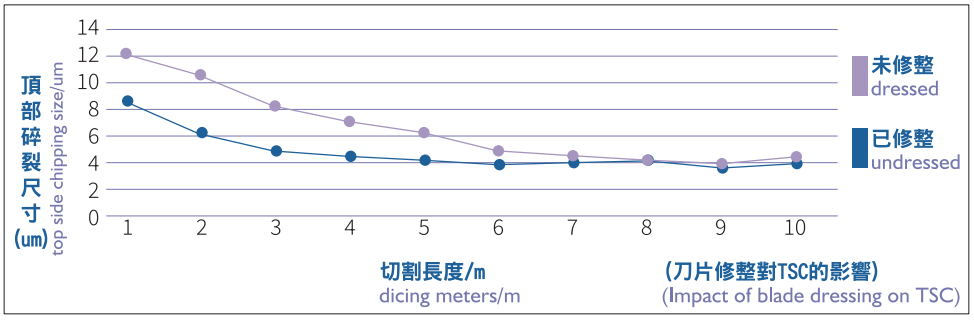
HWES25-series soft blades feature a cutting speed up to 200 mm/s and a lifespan over 7000m. They are suitable for hard and brittle materials like PCB, EMC, and LTCC substrates.

外徑(mm) Outer diameter	厚度(mm) Thickness		厚度公差(mm) Thickness tolerance	內徑(mm) Inner diameter	粒度 Grit size	結合劑 Bond	體積濃度 Volume concentration	開槽(個) Number of slots
50 52 54 56 58 59	0.02 0.04 0.06 0.08 0.10 0.12 0.14	0.16 0.18 0.20 0.22 0.24 0.26 0.28	P ±0.003 A ±0.005 B ±0.010 C ±0.015	40	340 400 500 600 800 1000 1200	Ⓢ 鋒利型 (Sharp) Ⓝ 通用型 (Normal) Ⓗ 高強型 (High Strength)	30 50 70 90 110 130 150	S16 (16 slots) S32 (32 slots) S48 (48 slots)

修刀板 Dressing Board

修刀板適用於各種刀片的整形和修銳。可快速消除刀片安裝偏心，同時使刃口磨料充分暴露，縮短預切割時間，使刀片快速進入良好切割狀態。

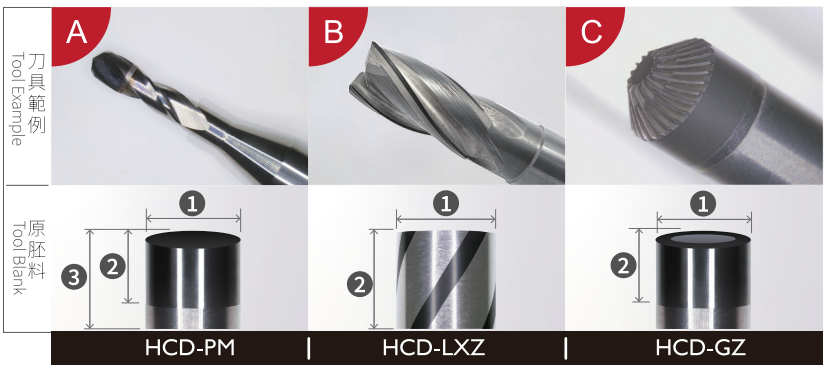
HWES25-series soft blades feature a cutting speed of up to 200 mm/s and a lifespan over 7000m. They are suitable for hard and brittle materials like PCB, EMC, and LTCC substrates.



PCD刀具

PCD cutting tool

突破傳統刀具設計，刃數可達100刃，用於不同硬度的材料加工時，可達到不同的表面粗糙度。
A breakthrough in traditional cutting tool design, the number of flute can reach up to 100. Achieving different surface roughness when used on materials of various hardness.



A 圓柱型PCD刀具 Cylindrical PCD Cutter
適用領域 (Application fields):
電子(Electronics)、航空(Aerospace)
醫療(Medical)、半導體行業(Semiconductor industries)

B 螺旋型PCD刀具 Spiral PCD Cutter
適用領域 (Application fields):
精密機械加工(Precision machining)
模具製造(Mold manufacturing)

C 管狀PCD刀具 Tubular PCD Cutter
適用領域 (Application fields):
半導體(Semiconductor)
精密儀器製造(Precision instrument manufacturing)

型號 (Model)	介紹 (Introduction)
HCD.PM	可調整鑽石顆粒大小及鈷等成分含量。圓柱型PCD切削刀具特別適合微刀切削，滿足特殊要求。 Adjustable diamond particle size and cobalt content. Cylindrical PCD cutters are ideal for micro-blade cutting with flexible designs to meet special requests.
HCD.LXZ	可根據加工材料調整鑽石的螺旋角度分布。具高硬度、快速排屑及良好熱導性，適用於高速切削。 Adjustable spiral angle distribution of diamonds based on processing materials. High hardness, fast chip removal, and good thermal conductivity, suitable for high-speed cutting.
HCD.GZ	獨特的管狀設計提供高韌性，適合長刀片且不易斷裂。特別適合微型或螺旋切削。 Unique tubular design provides high toughness, suitable for long blades and less prone to breakage. Especially suitable for micro or spiral cutting.

型號 (Model)	應用 (Application)	顆粒度 (Granularity)	螺旋角 (Helix Angle)	① 直徑 (Diameter)	② 刀片長度 (Blade Length)	③ 刀模長度 (matrix)
HCD.PM	銑削. 鑽削 (Milling).(Drilling)	細 (Fine) 中 (Medium) 粗 (Coarse)	N/A	Blank: ∅1.5~∅25 Finished: ∅0.3~∅25	0.5~6	1~16
HCD.LXZ	高速銑削 (High-speed Milling)		30°	∅6.5~∅12.5	6~20	N/A
HCD.GZ	高速銑削 (High-speed Milling)		30°	∅6~∅16	6~12	N/A

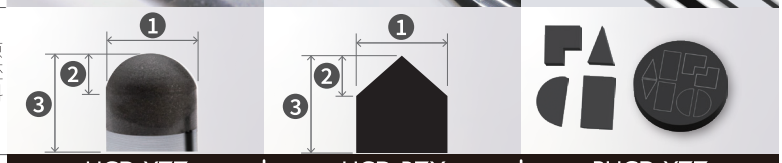
PCD刀具/鑽石散熱基板

PCD Cutting tool/Diamond Substrate

宏崴實業有限公司 HONWAY MATERIALS CO., LTD.

刀具範例 Tool Example

原胚料 Tool Blank



HCD-YZZ | HCD-RZX | PHCD-YZZ

D 圓錐型PCD刀具 Conical PCD Cutter
適用領域 (Application fields):
鑽孔 (Drilling)
切削加工 (Cutting processes)

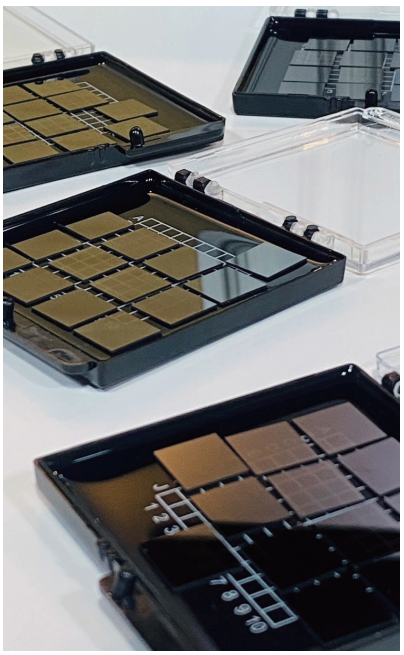
E 片狀PCD刀具 Flaky PCD Cutter
適用領域 (Application fields):
建築 (Construction)
石材加工 (Stone processing)

F PCD刀片 PCD Blade
適用領域 (Application fields):
金屬複合材料 (Metal composites material)
玻璃加工 (Glass processing)

型號 (Model)	介紹 (Introduction)
HCD.YZZ	具超高硬度及優良耐磨性，錐角及大小可根據需求定制，提高加工效率。特別適合鑽頭及倒角銑刀的生產。 Ultra-high hardness and excellent wear resistance with customizable cone angles and sizes to enhance processing efficiency. Especially suitable for the production of drill bits and chamfer milling cutters.
HCD.RZX	調整鑽石微粉顆粒大小以提供優異的耐磨性和刀片強度，特別適合大直徑鑽頭，提高鑽削效率。 Adjusting diamond micropowder particle sizes provide excellent wear resistance and blade strength, especially suitable for large-diameter drill bits, enhancing drilling efficiency.
PHCD.YZZ	具高硬度、高熱導性及低摩擦係數，顯著減少切削力，降低切屑堆積風險。可廣泛應用於各類材料的加工。 High hardness, high thermal conductivity, and low friction coefficient, significantly reduce cutting force and minimize chip deposits. Widely applied in processing various materials.

型號 (Mark)	應用 (Application)	顆粒度 (Granularity)	螺旋角 (Helix Angle)	① 直徑 (Diameter)	② 刀片長度 (Blade Length)	③ 刀模長度 (matrix)
HCD.YZZ	銑削. 鑽削 (Milling).(Drilling)	細 (Fine) 中 (Medium) 粗 (Coarse)	N/A	∅1.5~∅10.5	0.5~6	1-16
HCD.RZX	鑽削 (Drilling)		30°	∅6~∅20	10~25	N/A
PHCD.YZZ	鑽削、加工有色金屬及非金屬材料 (Drilling, Processing of non-ferrous and non-metallic materials)		30°	∅1.5~∅25	0.3~1.5	3.5

鑽石散熱基板 Diamond Substrate



高效能的散熱材料，主要用於高功率電子元件。它利用鑽石極佳的熱傳導能力，能迅速將半導體元件產生的熱量導出，有效降低元件溫度，從而提高其性能、穩定性和壽命。
Diamond substrates use the exceptional thermal conductivity of diamond to cool high-power electronics, thereby improving the performance, stability, and lifespan of a component.

熱絲法CVD (Hot Filament CVD)

- **方法：使用高溫金屬絲(熱絲)分解含碳氣體，生成鑽石。**
  Method: Uses a high-temperature metal filament to decompose carbon-containing gases and grow diamond.
- **特色：製程穩定，能生產大面積的鑽石，成本較低。**
  Features: Stable process, capable of producing large-area diamond, and has a relatively low cost.
- **用途：適合需要大面積、高穩定性的應用，例如工具鍍層或一般的散熱基板。**
  Applications: Suitable for large-area, high-stability needs, such as tool coatings or general heat sinks.

直流等離子體CVD (DC Plasma CVD)

- **方法：利用直流電弧產生高溫等離子體來分解氣體。**
  Method: Uses a DC electric arc to generate a high-temperature plasma to decompose gases.
- **特色：生長速度快，能產生熱導率極高、接近單晶結構的鑽石。**
  Features: Fast growth rate, capable of producing diamond with extremely high thermal conductivity and a near-monocrystalline structure.
- **用途：專門用於高功率密度電子元件和光電子器件的散熱基板。**
  Applications: Specifically for heat sinks in high-power-density electronic components and optoelectronic devices.

微波等離子體CVD (Microwave Plasma CVD)

- **方法：使用微波能量產生高純度等離子體。**
  Method: Uses microwave energy to create a high-purity plasma.
- **特色：可以製造光學級和寶石級的高品質鑽石，熱導率和光學穿透性都很好。**
  Features: Can produce high-quality, optical-grade and gem-grade diamonds with excellent thermal conductivity and optical transparency.
- **用途：應用範圍最廣，包括高功率電子散熱、醫療設備、光學、甚至珠寶飾品等高階應用。**
  Applications: The most versatile method, used for high-power electronic heat sinks, medical equipment, optics, and high-end applications like jewelry.

元素半導體材料

Elemental semiconductor material

銦(In) Indium

應用範圍 (Application):
主要用於製備III–V族化合物半導體、高純合金、摻雜劑、銦封、ITO、核輻射安全監控、電接觸元件、焊料、太陽能電池等。
(Use for preparation II-VI elements chemical compound semiconductor, high purity metal, dopant, ITO powder, solar cell, etc)

物理性質 (Physical property):

原子量 (Atomic weight)	114.818	熔　點 (Melting point)	156.61°C
密　度 (Density)	7.30g/cm³	沸　點 (Boiling point)	2060°C

物理形態 (Form): 粉狀 (Powder) | 丸狀 (Pellet) | 錠狀 (Ingot) | 棒狀 (Rod) | 絲狀 (Wire)

包裝 (Package)：
無塵PE袋+鋁塑袋真空封裝 (Dust free PE bag + aluminum plastic bag vacuum packaging)
玻璃瓶充氣+PE袋真空包裝 (Glass bottle inflation + PE bag vacuum packaging)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純銦 (5N) High purity In (5N)	99.999 %	Ag. Al. Cd. S. Si. As. Cu. Fe. Mg. Ni. Pb. Tl. Sn. Zn	<10ppm
超純銦 (6N) Ultra purity In(6N)	99.9999 %	Cd. S. Si. Cu. Fe. Mg. Pb. Sn	<1ppm
超高純銦 (7N) Ultra-high purity In (7N)	99.99999 %	Ag. Cd. Cu. Fe. Mg. Pb. Ni. Zn	<0.1ppm

鎵(Ga) Gallium

應用範圍 (Application):
主要用於製備III–V族化合物半導體、高純合金、以及鍺、矽單晶摻雜劑、電子、光電領域。
(Use for preparation III-V elements chemical compound semiconductor, high purity metal, germanium,dopant of monocrystal silicon)

物理性質 (Physical property):

原子量 (Atomic weight)	69.723	熔　點 (Melting point)	29.8°C
密　度 (Density)	5.904g/cm³ at 25°C	沸　點 (Boiling point)	2403°C

物理形態 (Form): 液態為銀白色 (Liquid: silver white) | 固態為藍白色 (solid: blue white)

包裝 (Package)：
聚乙烯塑膠瓶包裝，外加聚乙烯薄膜封裝
(Packed with polythene bottle,and polyethylene film encapsulation)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純鎵 (5N) High purity Ga (5N)	99.999 %	Al. Ca. Cu. Fe. Hg. In. Mg. Ni. Pb. Sn. Zn. Si	<10ppm
超純鎵 (6N) Ultra purity Ga(6N)	99.9999 %	Cr. Cu. Fe. Mg. Mn. Ni. Pb. Sn. Zn. Si	<1ppm
超高純鎵 (7N) Ultra-high purity Ga (7N)	99.99999 %	Cu. Fe. Mg. Mn. Pb. Sn. Zn. Si	<0.1ppm

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※ 如需訂購，請洽業務

※ Whether import or export is permitted depends on customs regulations.
※ Please contact sales for orders.

鍺(Ge) Germanium

應用範圍 (Application):
在半導體、航太測控、核子物理探測、光纖通訊、紅外線光學、太陽能電池、化學催化劑、生物醫學等領域都有廣泛而重要的應用。
(Have been widely used in semiconductor, aerospace control,nuclear physics, optical fiber communication, infrared optics, solar cells, chemical catalyst,biomedical and other fields)

物理性質 (Physical property):

原子量 (Atomic weight)	72.61	熔　點 (Melting point)	938.25°C
密　度 (Density)	5.35 g/cm^3	沸　點 (Boiling point)	2830°C

物理形態 (Form): 粉狀 (Powder) | 顆粒狀 (Granular) | 錠狀 (Ingot)

包裝 (Package)：
無塵PE袋+鋁塑袋真空封裝 (Dust free PE bag + aluminum plastic bag vacuum packaging)
玻璃瓶充氣+PE袋真空包裝 (Glass bottle inflation + PE bag vacuum packaging)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純鍺 (5N) High purity Ge (5N)	99.999 %	Al. Ca. Co. Fe. Mg. Ni. Cu. In. Zn. Si. Pb. As	<10ppm
超純鍺 (6N) Ultra purity Ge(6N)	99.9999 %	Al. Ca. Co. Fe. Mg. Ni. Cu. In. Zn. Si. Pb. As	<1ppm
高純氧化鍺 (6N) GeO_2 (6N)	99.9999 %	Al. Ca. Co. Fe. Mg. Ni. Cu. In. Zn. Si. Pb. As	<1ppm (Other:Cl<200ppm)

碲(Te) Tellurium

應用範圍 (Application):
主要用於製備 II−VI族化合物半導體、太陽能電池、熱電轉換元件、合金、致冷元件、氣敏、熱敏、壓敏、光敏、壓電晶體和核輻射探測、紅外線探測器等基礎材料。
(Use for preparation II-VI elements chemical compound semiconductor,t hermoelectricity transfer cell, refrigerating cell, piezoelectric crystal and infrared detector etc)

物理性質 (Physical property):

原子量 (Atomic weight)	127.60	熔　點 (Melting point)	449.5°C
密　度 (Density)	6.25g/cm^3	沸　點 (Boiling point)	988°C

物理形態 (Form): 粉狀 (Powder) | 顆粒狀 (Granular) | 錠狀 (Ingot) | 丸狀 (Pellet) | 塊狀 (Block)

包裝 (Package)：
無塵PE袋+鋁塑袋真空封裝 (Dust free PE bag + aluminum plastic bag vacuum packaging)
玻璃瓶充氣+PE袋真空包裝 (Glass bottle inflation + PE bag vacuum packaging)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純碲 (5N) High purity Te (5N)	99.999 %	Ag. Al. Cd. Cu. Fe. Mg. Ni. Pb. Se. Sn. Si	<10ppm
超純碲 (6N) Ultra purity Te(6N)	99.9999 %	Ag. Al. Cd. Cu. Fe. Mg. Ni. Pb. Se. Zn. Ca	<1ppm
超高純碲 (7N) Ultra-high purity Te (7N)	99.99999 %	Ag. Al. Cd. Cu. Fe. Mg. Ni. Pb. Zn. Ca. Se	<0.1ppm
二氧化碲 (5N) TeO_2 (5N)	99.999 %	Al. Ca. Cu. Fe. Pb	<10ppm

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元素半導體材料

Elemental semiconductor material

鎘(Cd)Cadmium

應用範圍 (Application):
主要用於製備 II –VI族化合物半導體、高純合金、焊料及原子反應器中控制棒、太陽能電池，紅外線探測器等。
(Use for preparation II-VI elements chemical compound semiconductor, high purity metal, battery solder, control rod of atomic reactor, solar cell, infrared detector, etc)

物理性質 (Physical property):

原子量 (Atomic weight)	112.41	熔　點 (Melting point)	321.07°C
密　度 (Density)	8.65g/cm³	沸　點 (Boiling point)	767°C

物理形態 (Form): 粉狀 (Powder) | 顆粒狀 (Granular) | 錠狀 (Ingot) | 棒狀 (Rod)

包裝 (Package)：
無塵PE袋+鋁塑袋真空封裝 (Dust free PE bag + aluminum plastic bag vacuum packaging)
玻璃瓶充氣+PE袋真空包裝 (Glass bottle inflation + PE bag vacuum packaging)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純鎘 (5N) High purity Cd (5N)	99.999 %	Ag. Al. Bi. Ca. Cr. Cu. Fe. Mg. Ni. Pb. Sb. Sn. Zn	<10ppm
超純鎘 (6N) Ultra purity Cd (6N)	99.9999 %	Ag. Al. Bi. Cr. Cu. Fe. Mg. Ni. Pb. Sb. Sn. Zn	<1ppm
超高純鎘 (7N) Ultra-high purity Cd (7N)	99.99999 %	Ag. Al. Bi. Cr. Cu. Fe. Mg. Ni. Pb. Sb. Sn. Zn	<0.1ppm

硒(Se) Selenium

應用範圍 (Application):
用於製備硒鼓材料、光電材料、靜電攝影及其他光學儀器材料。
(Use for preparation material of the selenium drum,photoelectric material,electrostatic photograph and other materials of optical instrument)

物理性質 (Physical property):

原子量 (Atomic weight)	78.96	熔　點 (Melting point)	221°C
密　度 (Density)	4.81g/cm³	沸　點 (Boiling point)	684.9°C

物理形態 (Form): 粉狀 (Powder) | 丸狀 (Pellet) | 錠狀 (Ingot)

包裝 (Package)：
無塵PE袋+鋁塑袋真空封裝 (Dust free PE bag + aluminum plastic bag vacuum packaging)
玻璃瓶充氣+PE袋真空包裝 (Glass bottle inflation + PE bag vacuum packaging)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純硒 (5N) High purity Se (5N)	99.999 %	Ag. Al. Bi. Cd. Cu. Fe. Ca. In. Md. Ni. Pb. Sb. Te. Tl	<10ppm
超純硒 (6N) Ultra purity Se (6N)	99.9999 %	Ag. Al. Bi. Co. Cu. Fe. Ni	<1ppm

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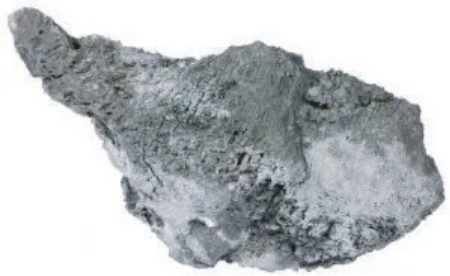
砷(AS) Arsenic



應用範圍 (Application):
高純砷是製取化合物半導體砷化鎵的原料，廣泛應用於半導體、紅外線發射器、塗料、陶瓷、化學工業等領域。
(High purity arsenic is the raw material for preparing compound semiconductor gallium arsenide. It is widely used in semiconductors, infrared emitters, coatings, ceramics and other fields.)

物理性質 (Physical property):

原子量 (Atomic weight)	74.921	熔　點 (Melting point)	814°C
密　度 (Density)	5.727 g/cm^3	沸　點 (Boiling point)	613°C

物理形態 (Form): 顆粒狀 (Granular) 棒狀 (Rod)

包裝 (Package)：
聚酯薄膜包裝後，塑膠薄膜真空封裝或石英管真空封裝 (After polyester film packaging, plastic film vacuum packaging or quartz tube vacuum packaging.)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純砷 (6N) High purity As (6N)	99.9999 %	Cu. Ag. Mg. Sb. Ni. Zn. Bi. Ca. Fe. Cr. Na. Al. Pb. K	<1ppm
高純砷 (6N) High purity As(7N)	99.9999 %	Cu. Ag. Mg. Sb. Ni. Zn. Bi. Ca. Fe. Cr. Na. S. Al. Se. Pb. K. Si. Ge. Cd. Sn. Te	<0.1ppm
超純砷 (7N5) Ultra purity As (7N5)	99.999995 %	Cu. Ag. Mg. Sb. Ni. Zn. Bi. Ca. Fe. Cr. Na. S. Al. Se. Pb. K. Si. Ge. Cd. Sn. Te	<0.05ppm

銻(Sb) Antimony

應用範圍 (Application):
用於製備Ⅲ−Ⅴ族化合物半導體、高純合金、電子致冷元件材料及鍺、矽單晶摻雜領域。
(Use for preparation Ⅲ-V elements chemical compound semiconductor, high purity metal,electronic refrigerating cell material and germanium,dopant of monocrystal silicon)

物理性質 (Physical property):

原子量 (Atomic weight)	121.76	熔　點 (Melting point)	630.63°C
密　度 (Density)	6.697g/cm^3	沸　點 (Boiling point)	1587°C

物理形態 (Form): 粉狀 (Powder) 顆粒狀 (Granular) 錠狀 (Ingot) 棒狀 (Rod)

包裝 (Package)：
無塵PE袋+鋁塑袋真空封裝 (Dust free PE bag + aluminum plastic bag vacuum packaging)
玻璃瓶充氣+PE袋真空包裝 (Glass bottle inflation + PE bag vacuum packaging)

規格 (Specification)	純度 (Purity)	檢測雜質 (Testing impurity)	雜質總含量 (Total impurity content)
高純銻 (5N) High purity Sb (5N)	99.999 %	Ag. As. Bi. Au. Cd. Cu. Mg. Mn. Ni. Pb. S. Zn. Si. Fe	<10ppm
超純銻 (6N) Ultra purity Sb(6N)	99.9999 %	Ag. As. Bi. Au. Cd. Cu. Mg. Mn. Ni. Pb. S. Zn. Si. Fe	<1ppm
超高純銻 (7N) Ultra-high purity Sb (7N)	99.99999 %	Ag. Au. Cu. Mg. Ni. Pb. Zn. Fe	<0.1ppm

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稀有原物料

Rare Earth Materials

氧化類 (Oxidation)	氧化鑭(La_2O_3)、氧化鈰(CeO_2)、氧化鐠釹($(PrNd)xOy$)、氧化釔(Y_2O_3)、氧化釤(Sm_2O_3)、氧化銪(Eu_2O_3)、氧化鋱(Tb_4O_7)、氧化鏑(Dy_2O_3)、氧化鈥(Ho_2O_3)、氧化鉺(Er_2O_3)、 氧化釓(Gd_2O_3)、氧化鐠(Pr_6O_{11})、氧化釹(Nd_2O_3)、氧化銩(Tm_2O_3)、氧化鐿(Yb_2O_3)、氧化鑥(Lu_2O_3)、氧化鈧(Sc_2O_3)
氯化類 (Chlorinated)	氯化鑭($LaCl_3 \cdot xH_2O$)、氯化鈰($CeCl_3 \cdot xH_2O$)、氯化鐠($PrCl_3 \cdot xH_2O$)、氯化釹($NdCl_3 \cdot xH_2O$)、氯化釔($YCl_3 \cdot xH_2O$)、氯化釤($SmCl_3 \cdot 6H_2O$)、氯化銪($EuCl_3 \cdot 6H_2O$)、氯化鋱($TbCl_3 \cdot xH_2O$)、氯化鏑($DyCl_3 \cdot 6H_2O$)、氯化鉺($ErCl_3 \cdot xH_2O$)、氯化釓($GdCl_3 \cdot xH_2O$)、氯化銩($TmCl_3 \cdot xH_2O$)、氯化鐿($YbCl_3 \cdot xH_2O$)、氯化鑥($LuCl_3 \cdot 6H_2O$)
無水氯化類 (Anhydrous chlorinated)	無水氯化鑭($LaCl_3$)、無水氯化鈰($CeCl_3$)、無水氯化鐠($PrCl_3$)、無水氯化釹($NdCl_3$)、無水氯化銪($EuCl_3$)
氟化類 (Fluorinated)	氟化鑭(LaF_3)、氟化鈰(CeF_3)、氟化鐠(PrF_3)、氟化釹(NdF_3)、氟化釔(YF_3)、氟化釤(SmF_3)、氟化鋱(TbF_3)、氟化鏑(DyF_3)
氫氧化類 (Hydroxide)	氫氧化鑭($La(OH)_3$)、氫氧化鈰($Ce(OH)_4$)、氫氧化鐠($Pr(OH)_3$)、氫氧化釤($Sm(OH)_3 \cdot xH_2O$)、氫氧化釹($Nd(OH)_3$)、氫氧化銪($Eu(OH)_3$)
金屬類 (Metal)	金屬鑭(La)、金屬鈰(Ce)、金屬鐠(Pr)、金屬釹(Nd)、金屬釤(Sm)、金屬釓(Gd)、金屬鋱(Tb)、金屬鏑(Dy)、金屬鏑鐵(Dy-Fe)、金屬鈥(Ho)、金屬鈥鐵(Ho-Fe)、金屬銩(Tm)、金屬鐿(Yb)、金屬釔(Y)、金屬鑥(Lu)
硝酸類 (Nitric Acid)	硝酸鑭($La(NO_3)_3 \cdot xH_2O$)、硝酸鈰($Ce(NO_3)_3 \cdot 6H_2O$)、硝酸鐠($Pr(NO_3)_3 \cdot 6H_2O$)、硝酸釹($Nd(NO_3)_3 \cdot 6H_2O$)、硝酸釤($Sm(NO_3)_3 \cdot 6H_2O$)、硝酸銪($Eu(NO_3)_3 \cdot xH_2O$)、硝酸釓($Gd(NO_3)_3 \cdot xH_2O$)、硝酸鋱($Tb(NO_3)_3 \cdot xH_2O$)、硝酸鏑($Dy(NO_3)_3 \cdot xH_2O$)、硝酸鈥($Ho(NO_3)_3 \cdot 6H_2O$)、硝酸鉺($Er(NO_3)_3 \cdot 6H_2O$)、硝酸銩($Tm(NO_3)_3 \cdot 6H_2O$)、硝酸鐿($Yb(NO_3)_3 \cdot xH_2O$)、硝酸釔($Y(NO_3)_3 \cdot xH_2O$)、硝酸鑥($Lu(NO_3)_3 \cdot xH_2O$)、硝酸鈰銨($(NH_4)_2Ce(NO_3)_6$)
醋酸類 (Acetic acid)	醋酸鑭($La(CH_3COO)_3 \cdot xH_2O$)、醋酸鈰($Ce(CH_3COO)_3 \cdot xH_2O$)、醋酸鐠($Pr(CH_3COO)_3 \cdot xH_2O$)、醋酸釹($Nd(CH_3COO)_3 \cdot xH_2O$)、醋酸釤($Sm(CH_3COO)_3 \cdot xH_2O$)、醋酸銪($Eu(CH_3COO)_3 \cdot xH_2O$)、醋酸釓($Gd(CH_3COO)_3 \cdot xH_2O$)、醋酸鋱($Tb(CH_3COO)_3 \cdot xH_2O$)、醋酸鏑($Dy(CH_3COO)_3 \cdot xH_2O$)、醋酸釔($Y(CH_3COO)_3 \cdot xH_2O$)
草酸類 (Oxalic acid)	草酸鑭($La_2(C_2O_4)_3 \cdot xH_2O$)、草酸鈰($Ce_2(C_2O_4)_3 \cdot xH_2O$)、草酸鐠($Pr_2(C_2O_4)_3 \cdot xH_2O$)、草酸釹($Nd_2(C_2O_4)_3 \cdot xH_2O$)、草酸釤($Sm_2(C_2O_4)_3 \cdot xH_2O$)、草酸銪($Eu_2(C_2O_4)_3 \cdot xH_2O$)、草酸釓($Gd_2(C_2O_4)_3 \cdot xH_2O$)、草酸鋱($Tb_2(C_2O_4)_3 \cdot xH_2O$)、草酸鏑($Dy_2(C_2O_4)_3 \cdot xH_2O$)、草酸鐠釹($(PrNd)x(C_2O_4)y$)
碳酸類 (Carbonic acid)	碳酸鑭($La_2(CO_3)_3 \cdot xH_2O$)、碳酸鈰($Ce_2(CO_3)_3 \cdot xH_2O$)、碳酸鐠($Pr_2(CO_3)_3 \cdot xH_2O$)、碳酸釹($Nd_2(CO_3)_3 \cdot xH_2O$)、碳酸釤($Sm_2(CO_3)_3 \cdot xH_2O$)、碳酸鐠釹($(PrNd)x(CO_3)y$)
硫酸類 (Sulfuric acid)	硫酸高鈰($Ce(SO_4)_2 \cdot xH_2O$)
其它 (Other)	碳化矽(SiC)、氧化鋁(Al_2O_3)、氧化鋯(ZrO_2)、鈦酸鋇($BaTiO_3$)、奈米金屬粉(Nano metal powder)、鎳包碳化矽(Ni coated SiC)、銅包碳化矽(Co coated SiC)、防偽螢光粉(Anti-counterfeiting fluorescent powder)、cBN立方氮化硼、銅錫粉(Copper tin powder)、燒結粉(Sintered powder)、多晶/單晶鑽石粉(Polycrystalline/Monocrystalline diamond powder)、各類鑽石粉末(Various diamond powders)

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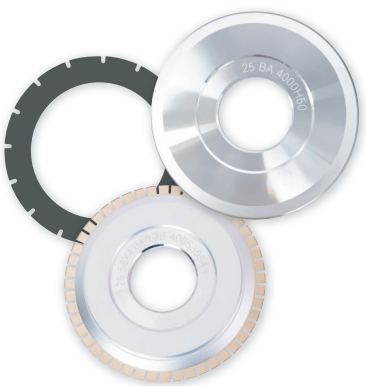
可依客戶需求調整各種純度、規格
Various purity and specifications can be adjusted according to your needs.

元素半導體材料
ELEMENTAL SEMICONDUCTOR MATERIAL

備忘錄

MEMO

奈米鑽石拋光液
NANO DIAMOND SLURRY



鑽石划刀片(硬刀/軟刀)
DIAMOND DICING BLADE/HUB BLADE

HONWAY MATERIALS

總型錄

金相專區

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