



*“ Total Solution for Your
Polishing Requirements ”*

Beijing Grish Hitech Co., Ltd.



GRISH group always adheres to the business philosophy which is “pursuing the material and spiritual happiness of all employees while contributing to the progress and development of human society”. The company is people-oriented, giving full opportunity to its employees to show the talents and skills, striving to create more values for customers, and realizing the coordinated development of individual employee, enterprises, customers and societies.

Just like toothpastes and cosmetics products that make people more beautiful, the precision grinding and polishing materials developed and produced by GRISH company can be used to improve the surface accuracy and beauty of various high-precision parts, hence GRISH products become the favorite of many customers.

New voyage calls for new passion and new mission contains new hope. We always comply with the development and processing needs of various industries, constantly create new technologies, products, develop various processes and entire polishing solutions in order to support customers’ development and success.

A handwritten signature in black ink, reading "Katsu Heiko".

Katsu Heiko
President of Beijing Grish Hitech Co., Ltd.

Company Basic Information

Name	Beijing Grish Hitech Co., Ltd.
Founded	June 2001
CEO	Katsu Heiko
Address	Rm 402, Block C, Zhongguancun Development Building, No. 12, Shangdi information Rd., Haidian District, Beijing, China 100085
Business	<ol style="list-style-type: none"> 1. Manufacture and sale of the polishing materials, Polishing machines and tools etc. 2. Research and Develop satisfied products upon the customers' request. 3. Provide complete polishing solution to the customers.

Company History

2001	Beijing Grish established.
2002	Lapping film diamond series was developed.
2005	Fangshan plant and R&D center founded.
2007	ISO9001, ISO14001, OHSAS18001 Certified.
2008	Polycrystalline diamond project developed.
2011	Electrostatic line went into production.
2012	Yanshan plant went into production.
2015	Acquiring Japan Company Summit.
2017	Panjin plant went into production.
2018	Polishing machine plant went into production.
2019	Solid Wax and Dental Polishing Products developed.

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Subsidiaries



Headquarter
Beijing, China



Factories
Beijing, Panjin



Osaka Branch
Summit, Japan

Overseas Customers & Distributors



Products by Application

<p>Optical Communication</p> 	<p>Lapping Film</p> 	<p>Flocked-pile Polishing Film</p> 	<p>SC/AO/CO Polishing Slurry</p> 	<p>Monocrystalline Diamond Powder</p> 	<p>Polishing Pad</p> 	<p>Fiber Polisher & Polishing Jig</p> 
<p>Sapphire & SiC Wafer & Optical Window</p> 	<p>PCD & RCD Diamond Powder</p> 	<p>Diamond Polishing Slurry</p> 	<p>CMP Slurry</p> 	<p>Wax & Dewax Liquid</p> 	<p>High Efficient Lapping Agent</p> 	
<p>Metal Parts & Die & Metallography polishing</p> 	<p>Lapping Film</p> 	<p>Microfinishing Film Roll</p> 	<p>CMP Slurry</p> 	<p>Diamond Paste</p> 	<p>Diamond Polishing Slurry</p> 	
<p>LCD Panel & CF</p> 	<p>Flocked-pile Polishing Film</p> 	<p>3D Structured Film</p> 	<p>Grooved Lapping Film</p> 	<p>LCD Panel Polishing Fabric</p> 	<p>CF Polishing Tape</p> 	
<p>Electronics</p> 	<p>Lapping Film</p> 	<p>Flocked-pile Polishing Film</p> 	<p>3D Structured Film</p> 	<p>Polishing Slurry</p> 		
<p>Automobile</p> 	<p>Microfinishing Film Roll</p> 	<p>Scalloped-edge Microfinishing Film Roll</p> 	<p>Polishing Machine</p> 			
<p>Dental</p> 	<p>Diamond Polisher</p> 	<p>Dental Polishing Strip & Disk</p> 				

Products by Application

<p>Optical Glass & Crystal</p> 	<p>Lapping Film</p> 	<p>Diamond Powder</p> 	<p>Polishing Slurry</p> 	<p>Wax & Dewax Liquid</p> 	<p>High Efficient Lapping Agent</p> 
<p>Semiconductor Materials</p> 	<p>Diamond Powder</p> 	<p>Diamond Polishing Slurry</p> 	<p>CMP Slurry</p> 	<p>Lubricants/Dispersants (Base Liquid)</p> 	<p>Wax & Dewax Liquid</p> 
<p>Ceramics & Bearing</p> 	<p>Diamond Powder</p> 	<p>Diamond Polishing Slurry</p> 	<p>Diamond Paste</p> 	<p>CMP Slurry</p> 	<p>High Efficient Lapping Agent</p> 
<p>Hard Disk · Magnetic head</p> 	<p>Lapping Film</p> 	<p>Burnish Tape</p> 	<p>PND Powder</p> 	<p>SC/AO/CO Polishing Slurry</p> 	<p>CMP Slurry</p> 
<p>Roller</p> 	<p>Ultra Fine Polishing Tape</p> 	<p>Microfinishing Film Roll</p> 	<p>Flocked-pile Polishing Film</p> 		
<p>AIN Submount</p> 	<p>Polishing Slurry</p> 	<p>Polishing Pad</p> 			
<p>Micromotor</p> 	<p>Ultra Fine Polishing Tape</p> 				

Applications by Product



	Optical Communication	Sapphire and SiC Wafer	Automobile	Electronics	Hard Metal	LCD Panel \CF	Dental	Micro Motor	Roller	Optical Glass & Crystal	Semiconductor	Aluminum Nitride	Hard Disk · Magnetic	Ceramic	Metallography Analysis
Lapping Film	●			●	●				●	●	●		●		●
Ultra Fine Polishing Tape						●		●	●				●		
Microfinishing Film Roll			●		●				●						
CF Polishing Tape						●					●				
Diamond-bead Polishing Tape	●								●		●		●		
Flocked-pile Polishing Film	●			●		●			●						●
LCD Panel Polishing Fabric						●									
3D Structured Film				●		●									
Scalloped-edge Microfinishing film Roll			●												
Grooved Lapping Film						●									
Detonation Polycrystalline Diamond Powder		●								●	●			●	
Monocrystalline Diamond Powder			●								●			●	
Rough-surface Monocrystalline Diamond Powder		●								●	●			●	
Detonation Nano Diamond Powder										●	●			●	
Ultra Fine Polishing Powder	●									●					
PND Powder												●			
Diamond-bead powder	●										●		●		
PCD Diamond Polishing Slurry		●		●						●		●		●	
MD & RCD Polishing Slurry		●		●						●		●		●	●
SC/AO/CO Polishing Slurry	●			●						●		●	●		●
CMP Slurry		●		●	●						●	●	●	●	●
High Efficient Lapping Agent		●								●				●	
Lubricants & Dispersants (Base Liquid)		●			●					●					
Polishing Oil															
Polishing Pad												●			●
Diamond Paste					●									●	●
Diamond Polisher Kit							●								
Dental Polishing Strip & Disk							●								
Solid Wax		●								●					
Liquid Wax		●								●					
Dewax Liquid		●								●					
Polisher	●		●												

Lapping Film

GRISH Lapping film / Polishing film is coated with precisely graded minerals (such as diamond, aluminum oxide, silicon carbide, silicon oxide, cerium oxide and so on) on the high strength polyester backing to provide a uniform, consistent finish. With or without PSA (Pressure Sensitive Adhesive) backing, and available in sheets, discs and rolls for meeting the use on any type of polishing equipment. These films are widely used in the polishing of fiber optic connectors, roller, hard disk and metal parts etc.



Specification

Abrasive Grit Size	Diamond (D)	Silicon Carbide (SC)	Aluminum Oxide (AO)	Silicon Oxide (SO)	Cerium Oxide (CO)
80µm #180	●				
60µm #240	●				
45µm #360	●				
40µm #400	●		●		
30µm #600	●	●	●		
20µm #800			●		
16µm #1000	●	●	●		
15µm #1200	●	●	●		
12µm #1500			●		
9µm #2000	●	●	●		
6µm #2500	●				
5µm #3000		●	●		
3µm #4000	●	●	●		
2µm #6000	●		●		
1µm #8000	●	●	●		
0.5µm #10000	●		●		
0.3µm #15000			●		●
0.01µm				●	
Standard Size	Round: Φ70mm, Φ110mm, Φ127mm (5in), Φ203mm (8in) Rectangle: 114mm*114mm, 152mm*152mm (6in*6in), 228mm*280mm (9in*11in)				

Remark: Customizations are available upon requests.

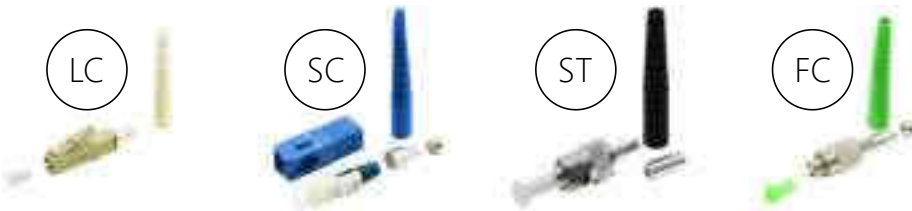
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Applications

Product series	Application and explanation
D (Diamond)	Lapping for fiber optic connector, fiber array and glass pig tail (angle removal, rough grinding, medium polishing and fine polishing).
	Polishing for magnetic heads and hard disks.
	Lapping and polishing for optical glasses, optical crystal and LED.
	Lapping and polishing for semiconductor wafer (gallium arsenide, indium phosphide etc.)
	Edge polishing for silicon wafer.
SC (Silicon Carbide)	Epoxy and glass removal.
	Lapping and polishing for plastic ferrules.
	Fine finishing and polishing for magnetic heads.
AO (Aluminum Oxide)	Polishing for fiber optic connector.
	Polishing for silicon wafer used in solar cells.
	Polishing for hard disks.
	Polishing for ITO.
SO (Silicon Oxide)	Lapping and polishing for optical crystal.
	The final super-precise polishing of fiber optic connector.
CO (Cerium Oxide)	The final polishing for fiber optic connectors.
	Polishing for optical devices.

◆ Fiber Optic Connector Polishing



Recommended polishing process: D30, D9, D1 and final polishing.
Below is good end-face pictures in 400 times magnification for each polishing step:



D30 (Diamond 30µm)



D9 (Diamond 9µm)



D1 (Diamond 1µm)



Final Polishing Film

◆ MTP/MPO connector



◆ Hard disk



◆ Hard alloy



◆ Metallography polishing



Features

- ◆ Superior finish surface.
- ◆ Consistent polishing performance.
- ◆ Long life and highyield.
- ◆ Applicable to both dry and wet polishing.

Ultra Fine Polishing Tape

GRISH Ultra Fine Polishing Tape is coated with precisely graded minerals on the PET backing. You can achieve consistent, predictable finishing, faster and easier than traditional methods, it help to increase your productivity and reduce your costs. It is widely used for the polishing of hard materials such as carbide, ceramics, hard metals, alloys and composites. Precision coating produce consistent fine finishes.



Specification

Abrasive Grit Size	Diamond (D)	Silicon Carbide (SC)	Aluminum Oxide (AO)
80µm #180	●		
60µm #240	●		
45µm #360	●		
40µm #400	●		●
30µm #600	●	●	●
20µm #800			●
16µm #1000	●		●
15µm #1200	●	●	●
12µm #1500			●
9µm #2000	●	●	●
6µm #2500	●		
5µm #3000		●	
3µm #4000	●	●	●
2µm #6000	●		●
1µm #8000	●	●	●
0.5µm #10000	●		●
0.3µm #15000			●
Width	1.2mm, 1.6mm, 2.0mm, 2.5mm 3.0mm, 3.2mm, 3.8mm, 5.0mm, 12.6mm, 101.6mm		
Length	45m (150 feet), 100m, 183m (600 feet), 200m		

Remark: Customizations are available upon requests.

Features

- ◆ Superior finish surface with high removal rate.
- ◆ Consistent polishing performance.
- ◆ Good flexibility to fit to curved surface.
- ◆ Applicable to both dry and wet polishing.

Applications

- ◆ Semiconductor materials



- ◆ Micromotor



- ◆ Industrial roller



- ◆ LCD panel



- ◆ Hard disk





Microfinishing Film Roll

GRISH Microfinishing film is produced by coating the abrasive grains uniformly on the high strength PET film, which can provide high efficiency and achieve mirror finishing result.

Available abrasive materials are aluminum oxide, silicon carbide and diamond etc. to meet different hardness of work-piece finishing requirements.

Specification

Abrasive	Silicon Carbide (SC)	Aluminum Oxide (AO)	Diamond (D)
Grit Size			
100µm #150		●	
80µm #180	●	●	●
60µm #240	●	●	●
50µm #320		●	
40µm #360	●	●	●
30µm #600	●	●	●
20µm #800		●	●
15µm #1200	●	●	●
12µm #1500		●	
9µm #2000	●	●	
PET (base) thickness	100µm (4mil)	75µm(3mil) 125µm (5mil)	100µm(4mil)
Standard Size	200mm*15m, 101.6mm (4in)*46m, 100mm*15m, 112.6mm (1/2in)*46m		
Backing	Anti-slip, PSA, Velcro		

Remark: Customizations are available upon requests.

Applications

◆ Industrial roller

- Rubber roller
- Electroplating metal roller



- Stainless steel roller



Recommended process with AO abrasive:
80µm>40µm>20µm>12µm

◆ Automotive

- Crankshaft
- Camshaft
- Gear-shaft



Features

- ◆ High removal rate with well-plated abrasive grains.
- ◆ Easy scraping and less plug.
- ◆ Consistent finish performance with uniform PET backing and abrasive plated-upon.
- ◆ Long durability and good cost-performance for customers.

CF Polishing Tape

GRISH CF Polishing Tape is made by uniform coating of micron-graded aluminum oxide powder on PET backing. It is used to flatten the protrusion point and repair the defects effectively in LCD color filter process.



Specification

Abrasive	Aluminum Oxide (AO)
Grit Size	
1μm #8000	●
0.5μm #10000	●
0.3μm #15000	●
PET (base) thickness	25μm(1mil), 50μm(2mil)
Width	3.8mm, 12.6mm
Length	50m, 100m

Remark: Customizations are available upon requests.

Product micrograph



Features

- ◆ Highly uniform coating surface and consistent thickness.
- ◆ Smooth and straight cutting edge.
- ◆ Good cleanliness.

Applications

- ◆ LCD Panel CF Repair
- ◆ Semiconductor





Diamond-bead Polishing Tape

GRISH Diamond-bead Polishing Tape is made from micron size diamond beads which consist of much smaller micron size diamond particles. It acts like a micron grinding stone during polishing process, and gives smooth polishing surface with high removal rate. During polishing process, the diamond beads break into smaller particles, which perform as polishing chain and provide consistent polishing and achieve longer life.

Specification

Abrasive	Diamond-bead Powder
Primary grit size	0.7 μ m, 1.5 μ m
Aggregated grit size	22.0 \pm 2.0 μ m
Base material thickness	75 μ m (3mil) , 50 μ m (2mil) , 25 μ m (1mil)
Standard Size	Sheet: 114mm*114mm, 152mm*152mm, 228mm*228mm Disc: Φ 70mm, Φ 110mm, Φ 127mm , Φ 203mm Strip: the minimum width is 0.8mm, the tape length and the core size can be customized upon the customers' requirements.

Remark: Customizations are available upon requests.

Features

- ◆ Consistent removal rate and long life.
- ◆ Scratches free and produces superior surface finish.

Storage

- ◆ Temperature : 0 ~ 50 °C

Applications

- ◆ Hard Disk Magnetic Head Polishing



- ◆ Semiconductor



- ◆ Fiber Optic Polishing



- ◆ Other precision process



Flocked-pile Polishing Film



GRISH flocked-pile polishing film consists of micro or submicron size abrasive particles coated over the surface of every fiber pile. It belongs to fixed abrasives, but has good flexibility during polishing process.

Specification

Abrasive Grit Size	Aluminum Oxide (AO)	Aluminum Hydroxide (AOH)	Calcium Carbonate (CaCO ₃)	
20µm #800		●	●	
1µm #8000	●			
0.5µm #10000	●			
Base material	Flocking composite			
Standard size	15mm*0.838m, 55mm*74mm, 101.6mm*23m 135mm*20m, 160mm*15m, 190mm*20m, 200mm*10m			

Remark:

1. Customizations are available upon requests.
2. We also have the flocked-pile without abrasive, such as PGZ-1, EF-5A.

Applications

◆ Stainless steel roller



◆ LCD panel



◆ Electroplating metal roller



◆ Crankshaft



◆ Fiber Optic Polishing



Features

- ◆ High wear resistance, uniform polishing and efficient cleaning.
- ◆ Good flexibility.
- ◆ Good antistatic performance.



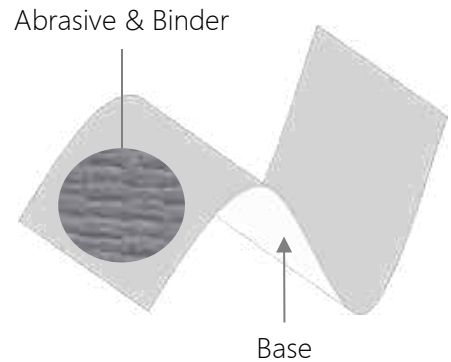
LCD Panel Polishing Fabric

GRISH LCD panel polishing fabric consists of fine abrasives coated over textile base. It shows good cleaning performance by removing resin residue as well as glass cullet when used for LCD panel cleaning process.

Specification

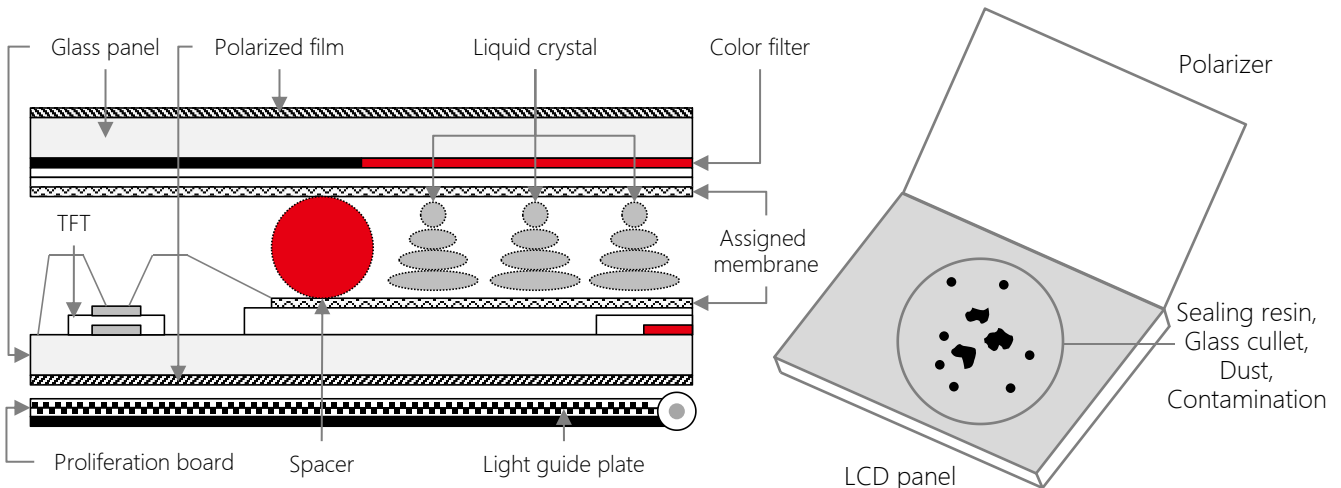
Abrasive	Aluminum Oxide (AO)
Grit Size	
3μm #4000	●
1μm #8000	●
Base material	Terylene and filament materials
Standard size	152mm*9m, 200mm*9m

Remark: Customizations are available upon requests.



Applications

- ◆ Cleaning of the LCD panel during the Cell process before the polarized film attached.



Features

- ◆ Excellent cleaning performance.
- ◆ Good flexibility and cushion-effect with textile backing.

3D Structured Film

GRISH 3D structured films have reduplicative 3D patterns such as cubic, pyramid, prismatic, diamond pattern and so on. It contains fine abrasives inside patterns. These patterns have uniform height, and show consistent and durable polishing ability.



Specification

Abrasive Grit Size	Aluminum Oxide (AO)	Aluminum Hydroxide (AOH)	Cerium Oxide (CO)	Calcium Carbonate (CaCO ₃)
45μm #360	●			
30μm #600	●			
15μm #1200	●			●
9μm #2000	●	●		●
5μm #3000	●	●		●
3μm #4000	●	●		
1μm #8000			●	
0.5μm #10000			●	
3D Structure	Pyramid, Square, Prismatic, Diamond			
Base material	PET			
Standard size	Polishing belt:15mm*838mm, 30mm*1600mm Grooved lapping film:55mm*74mm, 55mm*80mm, 55mm*100mm, 55mm*140mm			

Remark: Customizations are available upon requests.

Applications

◆ LCD panel



◆ Glass Scratches repair



◆ Car body paint repair

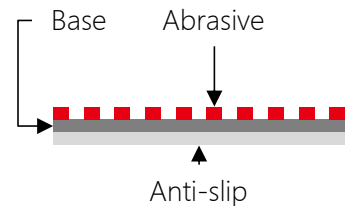


◆ Metal



Features

- ◆ Durable polishing performance with uniform abrasive module.
- ◆ Consistent removal rate with self-dressing characteristics.
- ◆ Discharge polishing debris through grooves among patterns.





Detonation Polycrystalline Diamond Powder

GRISH detonation polycrystalline diamond powder (PCD) is produced in a controlled explosion. Grains microscopic structure is similar with natural Carbonado.

Compared with monocrystalline diamond, PCD has more cutting edges, resulting in the higher removal rate, with good self-sharpening proprieties. The structure will always open new sharp edges introduced by releasing an outer layer of dull crystallites. The polycrystalline diamond can give higher removal rate and lowest level of scratches. That's why it is especially suitable for the high precision processing on super hard material.

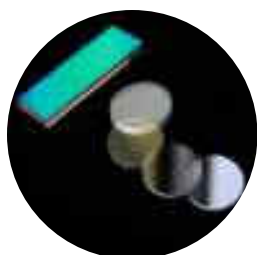
Specification

Model	Grade	D10 (μm)	D50 (μm)	D95 (μm)	Areas of use
PCD 1/8	Standard size	≥0.06	0.10-0.14	≤0.21	Surface polishing of optical crystal, ultra-hard ceramic, wafer substrate and metal.
PCD 1/4		≥0.11	0.20-0.25	≤0.40	
PCD 0-1		≥0.40	0.48-0.55	≤0.72	
PCD 0-2		≥0.70	0.90-1.10	≤1.50	
PCD 2-4		≥1.80	2.70-3.00	≤4.50	
PCD 3-6		≥2.80	4.00-4.40	≤7.00	
PCD 4-8		≥4.00	5.50-6.00	≤8.60	
PCD 5-9		≥4.70	6.30-7.00	≤10.00	
PCD 5-12		≥5.20	7.20-7.80	≤13.00	
PCD G3		Precision size	≥2.00	2.80-3.10	
PCD G3.5	≥2.40		3.30-3.60	≤5.00	
PCD G4	≥2.90		3.90-4.20	≤6.00	

Remark: Customizations are available upon requests.

Applications

- ◆ Sapphire and SiC wafer



- ◆ Optical glass & crystal



- ◆ Ceramic and metal



Features

- ◆ Higher toughness and better self-sharpening properties compared with monocrystalline diamond.
- ◆ Higher removal rate, less scratches, more consistent polishing performance compared with monocrystalline diamond.
- ◆ High wear resistance and long service life.

Monocrystalline Diamond Powder



GRISH Monocrystalline Diamond powder is made of high quality diamond through crushing, shaping, grading and other processes. Monocrystalline Diamond powder has sharp edge and high hardness.

Specification

Model	D10 (μm)	D50 (μm)	D95 (μm)
MD0-2	≥0.62	0.90-1.05	≤1.5
MD0-1.5	≥0.46	0.70-0.90	≤1.3
MD0-1	≥0.40	0.50-0.70	≤1.2
MD0-0.5	≥0.33	0.40-0.55	≤0.9

Remark: Customizations are available upon requests.

Features

- ◆ Nanometer and submicron grits available.
- ◆ Narrow particle sizes distribution resulting high lapping efficiency and less unexpected scratches.
- ◆ High purity, metal impurity less than 100ppm.

Applications

◆ Hard material

- Metal mold



- Gemstone



- Ceramic

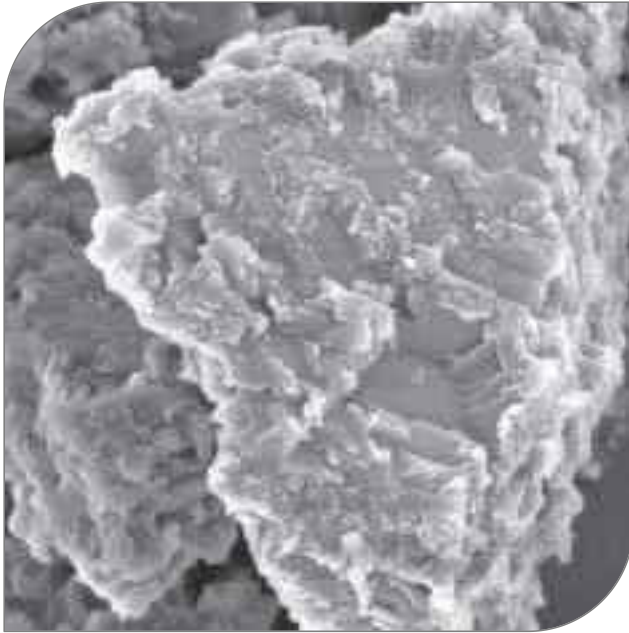


- Optical glass & crystal



◆ Diamond grinding tools and wheels





Rough-surface Monocrystalline Diamond Powder

GRISH Rough-surface Monocrystalline Diamond Powder, RCD for short, derived from monocrystalline diamond powder processed by a special technology. RCD Powder is more like polycrystalline diamond on performance. Compared with monocrystalline diamond powder, RCD powder has a rougher surface, which acts as a large number of small cutting chins, reduce surface roughness and enhance removal rate of the work-piece.

Specification

Model	D10 (μm)	D50 (μm)	D95 (μm)
RCD 2-4	≥2.1	2.8~3.3	≤5.0
RCD 3-5	≥2.7	3.6~3.9	≤6.0
RCD 4-6	≥3.0	4.0~4.4	≤7.0
RCD 8-16	≥3.6	5.0~5.3	≤7.5
RCD 10-20	≥12.0	17.0~19.0	≤27.0

Remark: Customizations are available upon requests.

Features

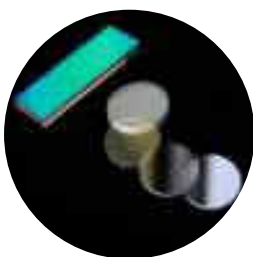
- ◆ Rough surface can have more contact points in the polishing process, Enhance the polishing effect accordingly.
- ◆ With good self-sharpening, it can keep high removal rate.
- ◆ With a large number of small cutting chins, it can reduce surface roughness of the workpiece.

Applications

- ◆ Optical glass & crystal



- ◆ Sapphire and SiC wafer



- ◆ Hard material

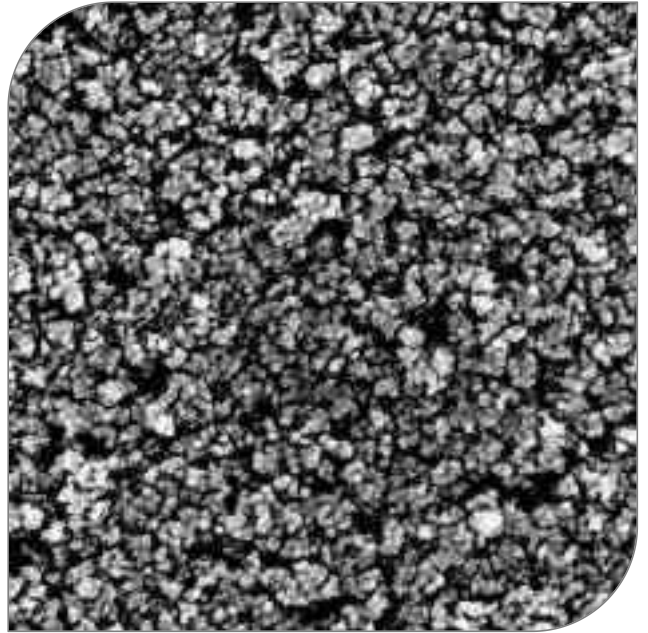
- Ceramic



- Metal



Detonation Nano Diamond Powder



GRISH Detonation Nano Diamond Powder (DND) is also called Ultra Fine Diamond (UFD), which is made from the dissociative carbon in high pressure and temperature during detonation by oxygen negative explosive. It is different from the synthesized diamond, the shape of DND is sphere without sharp edges and the micro crystal size is about 4-7nm.

Specification

Model	Grit size (D50)	Impurity
DND-30	25-40nm	≤3%
DND-50	40-60nm	
DND-100	85-135nm	
DND-R	Unclassified product, microcrystal size 4~7nm	

Remark: Customizations are available upon requests.

Features

- ◆ High purity and metal impurity is below 10ppm.
- ◆ High specific surface area is about 300-420 m²/g.
- ◆ Good dispersion stability.
- ◆ Excellent super fine polishing result and surface roughness achieve below 0.2nm.
- ◆ Outstanding wear resistance, corrosion-resistance, thermal conductivity and wave transmitting properties.

Applications

- ◆ Hard disk



- ◆ Lubricant additives



- ◆ Supplement for composite materials



- ◆ Electroplated coating





Ultra Fine Polishing Powder

GRISH has three kinds of ultra fine polishing powders Silicon Carbide, Aluminum Oxide and Cerium Oxide. They are mostly used for the polishing of optical components, fiber optic parts, display panel, semiconductor substrate, hard disk and magnetic head etc.

Specification

Abrasive	Model	Grit size
Silicon Carbide (SC)	GC1000	13.5 μ m-16.5 μ m
	GC4000	3.0 μ m-3.8 μ m
	GC10000	0.3 μ m-0.7 μ m
Aluminum Oxide (AO)	AO10000	0.4 μ m-0.6 μ m
	AO15000	0.25 μ m-0.4 μ m
Cerium Oxide (CO)	CO2	1.9 μ m-2.3 μ m
	CO1.5	1.1 μ m-1.5 μ m
	CO1	0.8 μ m-1.2 μ m
	CO0.5	0.5 μ m-0.8 μ m

Remark: Customizations are available upon requests.

Features

- ◆ Fine particle size and adjustable polishing effectiveness can meet various polishing requirements.
- ◆ Sharp particle size distribution and good crystal shape can achieve precision polishing result in short time.
- ◆ High purity can meet the request from magnetic record materials like hard disk, and semiconductor materials like silicon and other high-tech fields.

Applications

- ◆ Semiconductor



- ◆ Optical glass & crystal



- ◆ Hard disk



- ◆ LCD panel

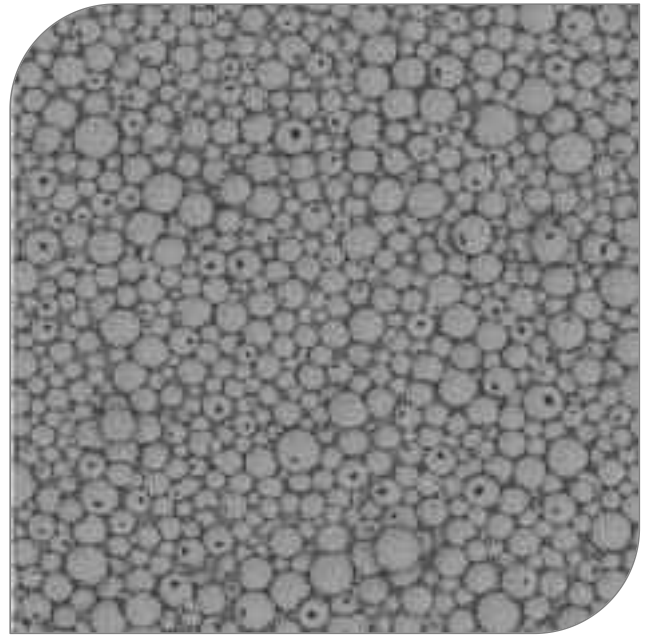


- ◆ Optical communication



Diamond-bead Powder

GRISH Diamond-bead powder is composed of micron sized diamond beads, and each bead is formed by much smaller micron sized diamond particles. During polishing process the diamond beads break into smaller particles, which perform as polishing chain and provide consistent polishing and achieve longer life. The special microstructure gives good performance, such as self-sharpening, continuous polishing force, and high removal rate with less scratches on the finish surface.



Specification

Model	Grit Size Distribution (μm)			
	D10	D50	D90	D95
D0.5-1-ZL	≥11.0	22.0±2.0	30 ~ 40	36 ~ 44
D1-3-ZL	≥11.0	22.0±2.0	30 ~ 40	36 ~ 44
D2-4-ZL	≥11.0	22.0±2.0	30 ~ 40	36 ~ 44
D3-6-ZL	≥11.0	22.0±2.0	30 ~ 40	36 ~ 44

Remark:
D0.5-1-ZL、D1-3-ZL are standard types, stable supply available.
D2-4-ZL、D3-6-ZL are not standard types.

Features

- ◆ Good self-sharpening ability.
- ◆ Long polishing life.
- ◆ High grinding force.
- ◆ Good surface polishing performance.

Applications

- ◆ Magnetic head



- ◆ Optical communication



- ◆ Semiconductor





PCD Diamond Polishing Slurry

GRISH Polycrystalline Diamond Slurry formulated with PCD Powder and water/oil soluble carrier liquids to maximize cutting and polishing efficiency. PCD Slurry provides high removal rate, less scratches, stable grinding rate and uniform polishing surface. We can also customize slurry as per specific requirements by customers.

Specification

Model		Grit size
Water base	Oil base	
PC-6-W	PC-6-O	6μm
PC-4-W	PC-4-O	4μm
PC-3-W	PC-3-O	3μm
PC-2-W	PC-2-O	2μm
PC-1-W	PC-1-O	1μm
PC-N500-W	PC-N500-O	1/2μm
PC-N250-W	PC-N250-O	1/4μm
PC-N200-W	PC-N200-O	1/5μm
PC-N100-W	PC-N100-O	1/10μm
PC-N50-W	PC-N50-O	1/20μm

Remark: Customizations are available upon requests.

Comparison Data

Item	Competitor	GRISH	Improvement
Qty.of wafer	20pcs/round	28pcs/round	Production capacity +40%
Removal rate	2.15μm/min	2.575um/min	Removal rate +20%
Ra	8nm-12nm	8nm-12nm	-
Consumption	~10ml/pc	7ml/pc	Consumption -30%

Features

- ◆ The advantage of internal-produced PCD powder makes sure the quality at consistent and high level.
- ◆ Special formula keeps excellent dispersion and high removal rate with less scratches.
- ◆ Stable polishing rate gives uniform polished surface.

Applications

- ◆ Sapphire and SiC wafer



- ◆ Hard disk



- ◆ Hard ceramic



- ◆ Sealing ring



- ◆ Optical glass & crystal



MD & RCD Diamond Polishing Slurry

GRISH MD and RCD slurries consist of well-graded powders and have good dispersion. Both water and oil-based are available. A complete range of specifications can meet various polishing requirements for hard materials.



Specification

◆ MD Diamond slurry

Model		Grit size
Water base	Oil base	
MD-6-W	MD-6-O	6μm
MD-4-W	MD-4-O	4μm
MD-3-W	MD-3-O	3μm
MD-2-W	MD-2-O	2μm
MD-1-W	MD-1-O	1μm
MD-N500-W	MD-N500-O	1/2μm
MD-N250-W	MD-N250-O	1/4μm
MD-N160-W	MD-N160-O	1/6μm
MD-N100-W	MD-N100-O	1/10μm
MD-N50-W	MD-N50-O	1/20μm

Remark: Customizations are available upon requests.

◆ RCD Diamond slurry

Model		Grit size
Water base	Oil base	
RC-17-W	RC-17-O	17μm
RC-10-W	RC-10-O	10μm
RC-6-W	RC-6-O	6μm
RC-5-W	RC-5-O	5μm
RC-4-W	RC-4-O	4μm
RC-3-W	RC-3-O	3μm

Remark: Customizations are available upon requests.

Applications

◆ Sapphire and SiC wafer



◆ Hard ceramic



◆ Hard alloy



◆ Optical glass & crystal



◆ Metal





SC/AO/CO Polishing Slurry

SC/AO/CO Polishing slurry series are produced by micro sized abrasives. They provide super finishing results on high precision optical material, hard disk, wafer, optical fiber connectors, magnetic heads, crystal compounds, ceramics and hard alloys etc.

Specification

Abrasive	Model	Grit size	Area of use
Silicon Carbide (SC)	SC-1/2	0.5-1 μ m	FO Connector, Hard Disk, Ceramics, Hard Alloy, Gems, Optical Glass etc.
	SC-1	0.8-1.2 μ m	
Aluminum Oxide (AO)	AO-1/3	0.2-0.4 μ m	FO Connector, Crystals(Si, Ge, GaAs, InP, SiC), Hard alloy, Steel, Optical Glass etc.
	AO-1/2	0.4-0.6 μ m	
	AO-1	0.8-1.2 μ m	
	AO-2	1.6-2.4 μ m	
Cerium Oxide (CO)	AO-3	2.6-3.6 μ m	FO Connector, Lens ,Hard Alloy, Gems, Optics Glass etc.
	CO-1/3	0.2-0.4 μ m	
	CO-1/2	0.4-0.6 μ m	
	CO-1	0.8-1.2 μ m	
Package	250ml, 500ml, 1litre, 1gallon		

Remark: Customizations are available upon requests.

Applications

◆ Optical glass & crystal



◆ Hard disk



◆ Hard alloy



◆ Fiber Optical Connectors



Note

- ◆ Shake the bottle before using.
- ◆ Keep storage temperature at 0-35°C.

Features

- ◆ Good dispersibility.
- ◆ Uniform practical size distribution.
- ◆ High removal rate.

CMP Slurry

GRISH CMP slurry takes colloidal silica as base with unique formula design according to different polishing requirements. Stable pH value keeps polishing rate stable and saves polishing time. It can be widely used in the chemical mechanical polishing for various materials, such as sapphire, semiconductor materials (ex. Si, Ge, GaAs, InP, SiC, GaN, AlN), stainless steel, aluminum magnesium alloy and compound crystal etc.



Specification

Model	Grit size	Particle appearance	pH	Viscosity	Concentration
SOQ-12D	110nm-130nm	Spherical	10.5±0.5	<20cst	20%
SO-100-PF	90nm-120nm			<10cst	20-50%
SO-80-PF	70nm-90nm			<10cst	20-50%
SO-60-PF	50nm-70nm			<10cst	20-50%
SO-40-PF	30nm-50nm			<10cst	20-50%
SO-20-PF	10nm-30nm			<30cst	10-40%
Testing instrument	Laser particle analyzer	SEM/TEM	pH meter	Viscometer	Hydrometer

Remark: Customizations are available upon requests.

Applications

◆ Silicon carbide substrate



◆ Sapphire · LED material



◆ Stainless steel



◆ Optical glass & crystal



◆ Aluminum nitride heat sink substrate

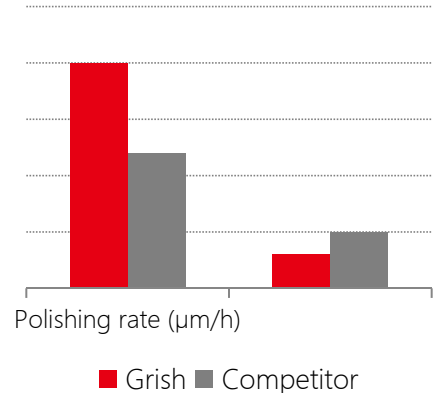


◆ Optical communication



Features

- ◆ Uniform spherical SiO₂ particles.
- ◆ High removal rate and stable polishing performance.
- ◆ Precision polishing quality with Ra<0.2nm and TTV<0.3um.
- ◆ Cycle use for several times.
- ◆ Applicable to low-temperature polishing process (Under 35°C).
- ◆ Neutral or weak acid polishing slurry is available.





High Efficient Lapping Agent

GRISH High Efficient Lapping Agent is a kind of water-soluble lapping agent, which is mostly used with B4C together in the sapphire process of double-side lapping and produce high removal rate. It also has good performance of cooling, lubricating and rust-proof. Thus it improves the usage of B4C efficiently and helps customer reducing the production cost.

Applications

◆ Optical glass & crystal



◆ Ceramic

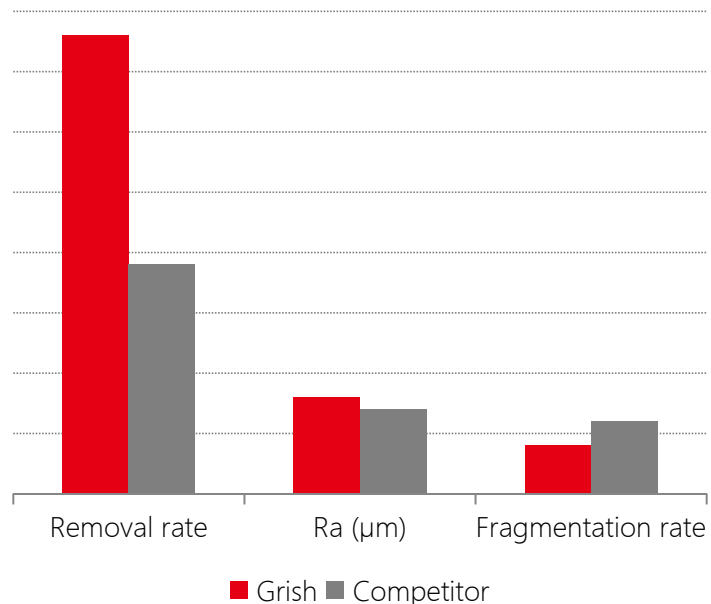


◆ Sapphire and SiC wafer



Features

- ◆ Enhancing removal rate.
- ◆ Making B4C used more cycles.
- ◆ Reducing fragmentation rate and getting good TTV.
- ◆ Cooling and lubricating wafers while lapping process.
- ◆ Good dispersion keeping B4C from precipitation.



Lubricants & Dispersants (Base Liquid)

GRISH lubricants can be mixed with abrasive materials such as diamond powder, which can achieve good dispersion and suspension effect, improve abrasive grinding force, achieve excellent grinding and processing effect. It is environmentally friendly and easy to be cleaned. Customizations are available upon the requirements, and it will be more convenient for customers to use.



Specifications

Model	Water-base	Oil-base
Mixable Abrasive	Diamond etc.	Diamond etc.
Mixable Abrasive Particle Size	Min. Size 0.03μm	Min. Size 0.10μm
Package	500ml, 1L, 5L, 25L	
Customized Content	Viscosity, pH value, density and other physical parameters of the lubricants. We can also customize the products according to the requirements of the customers.	

Features

- ◆ Good dispersity, high removal rate, wide applicability and so on.

Applications

- ◆ Sapphire and SiC wafer



- ◆ Optical glass & crystal



- ◆ Hard metal alloy



- ◆ Silicon material



- ◆ Ceramics



- ◆ Metallography analysis





Polishing Oil

Grish Polishing Oil is a kind of polishing agent with good fluidity and permeability, which can provide good lubrication for the surface processing and improve the finish results.

Specification

Model	Packing specification
PGE-2	500ml/ bottle (can be adjusted according to customer requirements)
Storage conditions	1) Storage temperature: 0°C ~ 40°C. 2) Storage humidity: 20-70%. 3) The product is recommended to be used within 2 years.

Features

- ◆ High purity and low ion content.
- ◆ Good fluidity and permeability.
- ◆ Good product stability and long storage time.

Note

- ◆ The product can be used directly or diluted with deionized water.
- ◆ When mixing this product with other additives, stir for 4-6 minutes.
- ◆ It is suggested that this product should not be reused.

Applications

◆ Stainless steel



◆ Sapphire and SiC wafer



◆ Optical communication



◆ Optical glass & crystal



◆ Hard metal alloy



Polishing Pad

GRISH polishing pad has unique microcellular structure which provides good polishing stability, abrasion resistance and keep good polishing liquid retention during polishing. It is widely used for high flattening process, such as wafer, glass, ceramic and metal polishing etc.



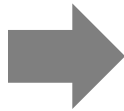
Specification

	Thickness	Hardness	Hole depth	Compression percentage	Velvt length	Size
	1.4±0.1mm	60±2	0.37mm	9%	0.4±0.05	Φ920±2mm
Testing instrument	Vernier caliper	Shore durometer	200X microscope	-	200X microscope	Tape measure

Remark: Customizations are available upon requests.

Applications

Used with CMP slurry together



● Sapphire material



● Silicon material



Mirror polishing

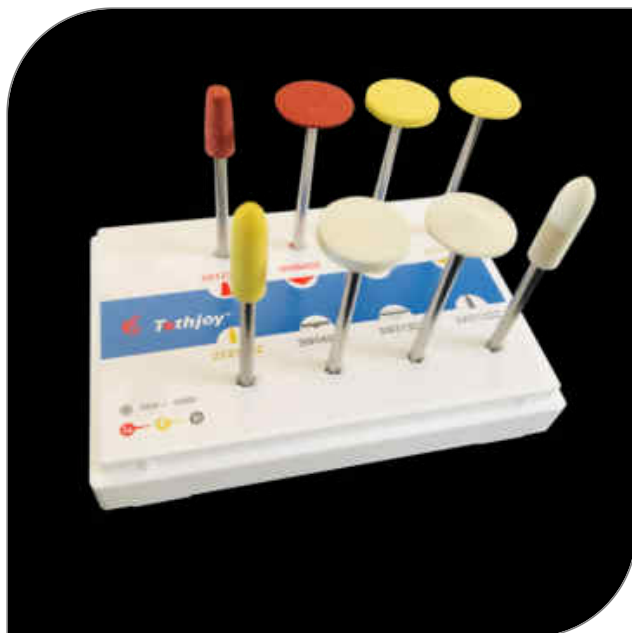
● Stainless steel

● Hard Alloy



Features

- ◆ Unique microcellular structure.
- ◆ Good flatness and does not epilate.
- ◆ High polishing stability.



Diamond Polisher Kit

GRISH Diamond Polisher Kit is a complete system for adjusting, shaping and polishing of zirconia and ceramic crown. Good polishing efficiency is due to the high content of diamond abrasives. Glazing operation is not needed after the polishing.

Specification

Model	Color & Grit size	Area of use
1R064DZ	Red 100µm	Shaping
1R173DZ		
2Y040DZ	Yellow 50µm	Pre-polishing
2Y313DZ		
2Y213DZ		
3W040DZ	White 20µm	Fine polishing
3W313DZ		
3W213DZ		

Applications

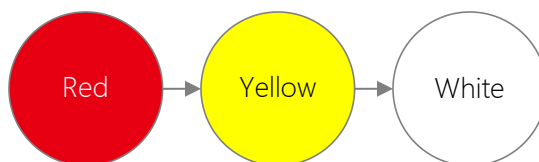
- ◆ Zirconia teeth



Features

- ◆ Quick shaping, polishing and super finishing.
- ◆ Good heat sink effect during polishing at high speed.
- ◆ Bright without grooves, good effect as real teeth.
- ◆ All grinding materials can be sterilized by 135 degrees of high pressure steam.

Instruction



Dental Polishing Strip & Disk

GRISH Polishing Strips and Disks are used for shaping and polishing of composite resin dentures. Grit sizes of abrasives are distinguished by colors. Customized grits and colors are available.

Recommended using order :
Purple -> Blue -> Green -> Pink.



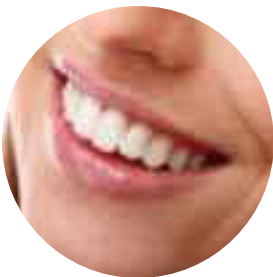
Specification

Model	Grit size	Base material	Abrasive material	Specification	
Polishing strip single grit size	Purple- 50 μm Blue- 30 μm Green- 20 μm Pink-12 μm	PET	Alumina	4mm * 152mm	
Polishing strip dual grit sizes				Φ=14mm & 12mm, Abrasive coating on both sides.	
Hose polishing disks					Φ=14mm & 12mm, Abrasive coating on single side.
Air hole polishing disks					

Remark: Customizations are available upon requests.

Applications

- ◆ Composite resin



Features

- ◆ Thin and flexible film can closely fit the surface of teeth.
- ◆ Central blank area in the polishing strip makes it easy to insert into the gap of teeth without any damage to adjacent surface.

Packaging





Diamond Paste

Grish diamond paste includes both polycrystalline diamond series and monocrystalline diamond series with unique recipe. Consistent quality is ensured within diamond powder process as well as compound manufacture process by ISO9000 system.

Specification

Grit size	Appearance		Area of use
	Monocrystalline	Polycrystalline	
50µm	Light grey	-	Fast grinding
30µm			General grinding
15µm			Fine grinding
9µm		Black	High precision grinding
6µm			Fine polishing
3µm			High precision polishing
1µm			Ultra fine polishing
0.5µm			Optical polishing

Remark: Customizations are available upon requests.

Features

- ◆ Consistent grinding and polishing performance with stable quality.
- ◆ Polycrystalline diamond paste makes finer surface than monocrystalline diamond paste at same grit.
- ◆ Customized paste is available upon request.

Applications

- ◆ Die and mould polishing



- ◆ Metallography polishing



- ◆ Spherical valve



- ◆ Metal



- ◆ Zirconia teeth



Solid Wax



GRISH Solid Wax is a kind of special hot-melt adhesive. It can be applied to stick carrier plate with work piece for single-side cutting, grinding or polishing process. It can meet the high requirement in the consistency of adhesive layer, strong adhesive force, heat resistance during process.

Specification

Model		Appearance	Softening temperature	Specific gravity at 25°C	Adhesive strength at 25°C	Size
Normal temperature	SW-TA1	Light yellow solid	62°C-68°C	1.063±0.02 g/cm ³	> 20kgf/cm ²	100g Cuboid
High temperature	SW-TB1		78°C-85°C			
High Bonding Strength	SW-N1		78°C-85°C			

Applications

Used for sticking carries with work pieces such as sapphire, optical crystal, ferrite material, ceramics, glass, etc. during cutting, grinding and polishing process.

◆ Optical glass & crystal



◆ Aluminum nitride heat sink substrate

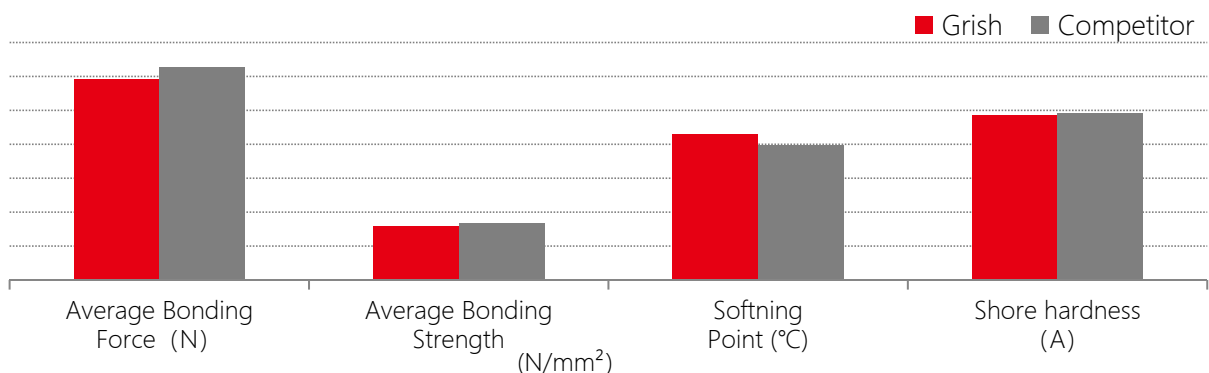


◆ Sapphire and SiC wafer



Features

- ◆ Good and stable performance.
- ◆ High bonding precision and strength.
- ◆ Easy to clean and dewax.
- ◆ Good TTV after waxing and dewaxing.





Liquid Wax

GRISH Liquid Wax is a kind of precision adhesive. It can be applied to stick carrier plate with work piece for single-side polishing process. It can meet the precision requirement in the consistency of adhesive layer, strong adhesive force, heat resistance during polishing process.

Specifications

	Normal temperature LW-NT-100	High temperature LW-HT -130
Appearance	Dark brown liquid	
Viscosity(cps at 25°C)	23.79	21.46
Solid content	30%	38%
Softening temperature	70°C	87°C
Specific gravity at 25°C	0.942	0.905
Recommended mounting temperature	120°C	
Recommended mounting time	30s-60s	
Cleaning agent	anhydrous ethanol, normal propyl alcohol, alkaline de-wax agent	

Remark:

1. Customizations are available upon requests.
2. The above data sheet is based on measured data.
3. Please adjust the process according to the actual conditions.

Applications

◆ Semiconductor



◆ Sapphire and SiC wafer



Features

- ◆ Good and stable performance.
- ◆ Easy waxing, stick firmly and easy to clean.

Dewax Liquid



GRISH Dewax Liquid is an anti-static cleaner that removes every layer of wax from the surface. It is a complementary product with solid wax. It is mainly used for wax cleaning for sapphire substrate, LED chips and other wax cleaning processes.

Specification

Model	Appearance	Specify Gravity	Acid base property	Boiling point	Life time (pcs/10litre)	Package
DW-S1	Yellowish transparent liquid	1.00±0.10	Weakly Alkaline	≥100°C	>2000	1litre, 5litre, 25litre, 1gallon, upon request
DW-S2		1.00±0.10	Weakly Acidic			
DW-Y1		0.90±0.10	-			
DW-T1		1.2±0.10	Alkaline			

Applications

- ◆ Optical glass & crystal



- ◆ Aluminum nitride heat sink substrate

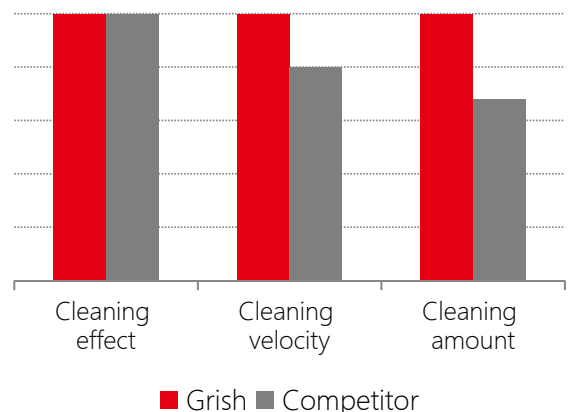


- ◆ Sapphire and SiC wafer



Features

- ◆ Quick dewaxing and no residue.
- ◆ High cleaning ability and long service life.
- ◆ Mild chemical proprieties and good TTV after dewaxing.



Fiber Polisher and Accessories



Polishing Equipment for Automotive Field



Camshaft Microfinishing Machine



Crankshaft Microfinishing Machine



Balance shaft Microfinishing Machine



Pressure assembling Machine

Micron (μm) and Mesh Conversion

Particle size	ASTM	Tyler	GB	BSS	JIS-R-6001	GRISH
400μm	#38					
420μm	#40	#35	#40	#36		
355μm	#45	#42	#45	#44		
320μm					#50	
300μm	#50	#48	#50	#52		
270μm	#53				#60	
250μm	#60	#60	#60	#60		
230μm					#70	
210μm	#70	#65	#70	#72		
200μm	#75					
194μm					#80	
180μm	#80	#80	#80	#85		
163μm					#90	
150μm	#100	#100	#100	#100		
137μm					#100	
125μm	#120	#115	#120	#120		
115μm					#120	
105μm	#140	#150	#140	#150		
100μm						#150
97μm					#150	
90μm	#170	#170	#170	#170		
82μm					#160	
80μm	#180	#180	#180	#180		#180
75μm	#200	#200	#200	#200		
69μm					#180	
63μm	#230	#250	#230	#240		
60μm	#250	#240	#250	#250		#240
57μm					#240	
53μm	#270	#270	#270	#300		
50μm	#300					#320
48μm					#280	
45μm	#325	#325	#325	#350		#360
40μm					#320	#400
37μm	#400	#400	#400	#400		
35μm					#360	
33μm	#425	#425	#425	#425		
30μm					#400	#600
25μm	#500	#500	#500	#500	#500	
23μm	#600					
20μm	#625	#625	#625	#625	#600	#800

Particle size	ASTM	Tyler	GB	BSS	JIS-R-6001	GRISH
17μm					#700	
16μm						#1000
15μm	#800	#800	#800	#800		#1200
14μm					#800	
13μm	#1000					
12μm						#1500
11.5μm					#1000	
10μm	#1250	#1250	#1250	#1250		
9.5μm					#1200	
9μm						#2000
8.5μm	#1670					
8μm					#1500	
6.7μm					#2000	
6.5μm	#2000					
6μm						#2500
5.5μm					#2500	
5μm	#2500	#2500	#2500	#2500		#3000
4μm					#3000	
3.4μm	#4000					
3μm					#4000	#4000
2.7μm	#5000					
2.5μm	#6000					
2μm	#6250	#6250	#6250	#6250	#6000	#6000
1.25μm	#7000					
1.2μm					#8000	
1μm	#12500	#12500	#12500	#12500		#8000
0.5μm					#10000	#10000
0.4μm						#15000
0.3μm					#15000	#20000
0.2μm					#20000	
0.1μm					#30000	



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