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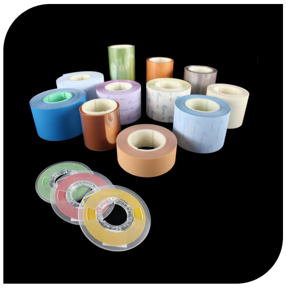


Catalog

Summit Super Abrasive Co.,Ltd.

CONTENTS

Company Profile

Philosophy	Summit Super Abrasive is always looking at abrasive materials and providing products that are at the forefront of the times, under the slogan of "the chosen (Summit), the best (Super), and the abrasive (Abrasive)".
Name	Summit Super Abrasive Co.,Ltd.
Founded	Oct. 2002
Founder	Katsu Heiko
Capital	24.2 Million Yen
Bank	Resona Bank, Senrioka Branch
Address	569-0071 6F, 1-14-17 Jokoku-cho, Takatsuki-shi, Osaka
TEL	072-673-2780
FAX	072-673-2781
Business	Production and sales of abrasive powder Manufacture and sale of polishing slurry Sales of precision polishing films Sales of other polishing related products.

History

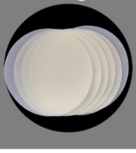
Oct. 2002	Summit Super Abrasive Co.,Ltd. (Head office: Settsu City, Osaka) is established.
Nov. 2004	High-precision inspection equipment is introduced to strengthen product support.
Nov. 2015	Became a subsidiary of Beijing Grish Hitech Co.,Ltd.
May. 2016	Head office relocated to Takatsuki City, Osaka

Products by Application

Optical Communication

Lapping Film

Flocked-pile Polishing Film



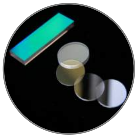
SC/AO/CO Polishing Slurry

Monocrystalline Diamond Powder

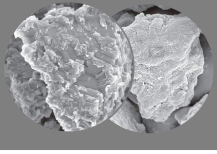
Polishing Pad

Fiber Polisher & Polishing Jig

Sapphire & SiC Wafer & Optical Window



PCD & RCD Diamond Powder



Diamond Polishing Slurry

CMP Slurry

Wax & Dewax Liquid

High Efficient Lapping Agent

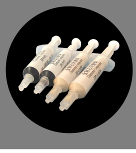
Metal Parts & Die & Metallography polishing

Lapping Film

Microfinishing Film Roll

CMP Slurry

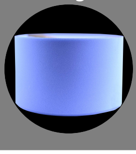
Diamond Paste



Diamond Polishing Slurry

LCD Panel & CF

Flocked-pile Polishing Film

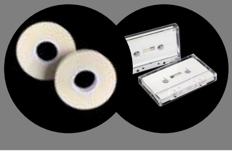


3D Structured Film

Grooved Lapping Film

LCD Panel Polishing Fabric

CF Polishing Tape

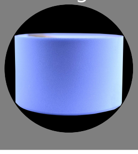


Cleaning Roller

Electronics

Lapping Film

Flocked-pile Polishing Film



3D Structured Film

Polishing Slurry

Automobile

Microfinishing Film Roll

Toothed Microfinishing Film Roll

Polisher

Dental

Diamond Polisher

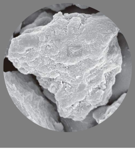
Dental Polishing Strip & Disk

Products by Application

Optical Glass & Crysta

Lapping Film

Diamond Powder



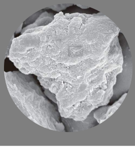
Polishing Slurry

Wax & Dewax Liquid

High Efficient Lapping Agent

Semiconductor Materials

Diamond Powder



Diamond Polishing Slurry

CMP Slurry

Lubricants/Dispersants (Base Liquid)

Wax & Dewax Liquid

硬質セラミック

Diamond Powder

Diamond Polishing Slurry

Diamond Paste

CMP Slurry

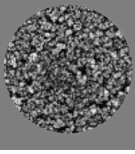
High Efficient Lapping Agent

Hard Disk · Magnetic head

Lapping Film

Burnish Tape

DND Powder



SC/AO/CO Polishing Slurry

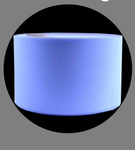
CMP Slurry

Roller

Ultra Fine Polishing Tape

Microfinishing Film Roll

Flocked-pile Polishing Film



AIN Submount

Polishing Slurry

Polishing Pad

Micromotor

Ultra Fine Polishing Tape

Applications by Product

	Optical Communication	Sapphire and SiC Wafer	Automobile	Electronics	Hard Metal	LCD Panel ¥CF	Denta	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	●			●		●			●						
LCD Panel Cleaning Roller						●									
LCD Panel Polishing Fabric				●		●									●
Scalloped-edge Microfinishing film Roll			●												
LCD Panel Cleaning Film						●									
Detonation Polycrystalline Diamond Powder		●								●	●			●	
Monocrystalline Diamond Powder			●								●			●	
Rough-surface Monocrystalline Diamond Powder		●								●	●			●	
Detonation Nano Diamond Powder										●	●			●	
Ultra Fine Polishing Powder	●									●					
DND Powder											●		●		
Diamond-bead powder	●										●		●		
PCD Diamond Polishing Slurry		●		●						●		●		●	
MD & RCD Polishing Slurry		●		●						●		●		●	
SC/AO/CO Polishing Slurry	●			●						●		●	●		
CMP Slurry		●		●	●						●	●	●	●	●
High Efficient Lapping Agent							●								●
Dental Polishing Strip & Disk							●								●
Diamond Compound					●									●	
Solid Wax		●								●					
Liquid Wax		●								●					
Dewax Liquid		●								●					●
Lapping Agent for B4C		●								●				●	●
Polishing Pad												●			
Resin Copper Surface Plate														●	
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

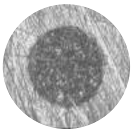
Grit Size / Abrasive	Diamond (D)	Silicon Carbide (SC)	Aluminum Oxide (AO)	Silicon Oxide (SO)	Cerium Oxide (CO)
80µm #180	●				
60µm #240	●				
45µm #360	●				
40µm #400	●		●		
30µm #600	●	●	●		
20µm #800			●		
16µm #1000	●	●	●		
15µm #1200	●	●	●		
12µm #1500			●		
9µm #2000	●	●	●		
6µm #2500	●				
5µm #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)				

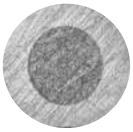
Remark: Customizations are available upon requests.

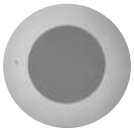
Application

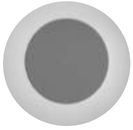
- Fiber Optic Connectors

D30 ⇒ D9 ⇒ D1 ⇒ Finishing film Photograph of end face after polishing (magnification: 400x):


D30 (Diamond 30μm)


D9 (Diamond 9μm)


D1 (Diamond 1μm)


Final Polishing Film

Product serie	Application
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.
	Lapping and polishing for optical crystal.
SO (Silicon Oxide)	The final super-precise polishing of fiber optic connector.
CO (Cerium Oxide)	The final polishing for fiber optic connectors.
	Polishing for optical devices.

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.

Specification

Grit Size/Abrasive	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			●
Specification	Please specify width (from 1.2 mm), length, core bore diameter, keyway, tolerance range, etc.		

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

- Industrial roller

- Hard disk

- Micromotor

- Semiconductor materials

- LCD panel

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

Grit Size/Abrasive	Silicon Carbide (SC)	Aluminum Oxide (AO)	Diamond (D)
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)	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:
EW80>EW40>EW20>EW12

- ◆ Automotive
  - Crankshaft

  - Camshaft

  - Gear-shaft

Features

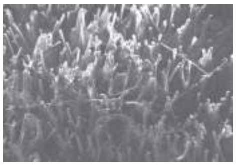
- ◆ High removal rate with well-plated abrasive grains.
- ◆ Easy scraping and less plug.
- ◆ Consistent finish performance with uniform PET backing and abrasive plated-upon.
- ◆ Long durability and good cost-performance for customers.

Flocked-pile Polishing Film

GRISH Flocked Pile Polishing Film consists of micro or submicron size abrasive and new polymer material particles coated over the surface of every fiber pile. It has excellent buffering performance and good cleaning effect, and is widely used in the final polishing of rollers, surface cleaning of LCD panels. (especially suitable for panels with ITO wiring).

Specification

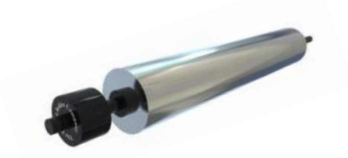
Grit Size /Abrasive	Aluminum Oxide (AO)	Aluminum Hydroxide (AOH)	Calcium Carbonate ($CaCO_3$)
20μm #800		●	●
1μm #8000	●		
0.5μm #10000	●		
Base material	Flocking composite		
Standard size	15mm×0.838m、55mm×74mm、101.6mm×23m 135mm×20m、160mm×15m、190mm×20m、200mm×10m		



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

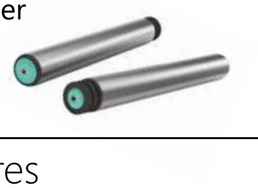
Applications

- ◆ Stainless steel roller



- ◆ LCD panel

- ◆ Electroplating metal roller



- ◆ Micro motor

- ◆ Crankshaft

Features

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

Cleaning Roller

GRISH Cleaning Roller is made of unique high-strength elastic polymer composite material and functional grinding layer combined by special adhesive, the roller has outstanding anti-scratch effect and good cleaning yield, suitable for cleaning in the LCD panel process.

Specification

Product Name	**Cleaning Roller**
Abrasives	AO、AOH、$CaCO_3$
Size	Φ70mm*644mm 、Φ70mm*544mm

＊Remark: Customizations are available upon requests.

Applications

- LCD panel

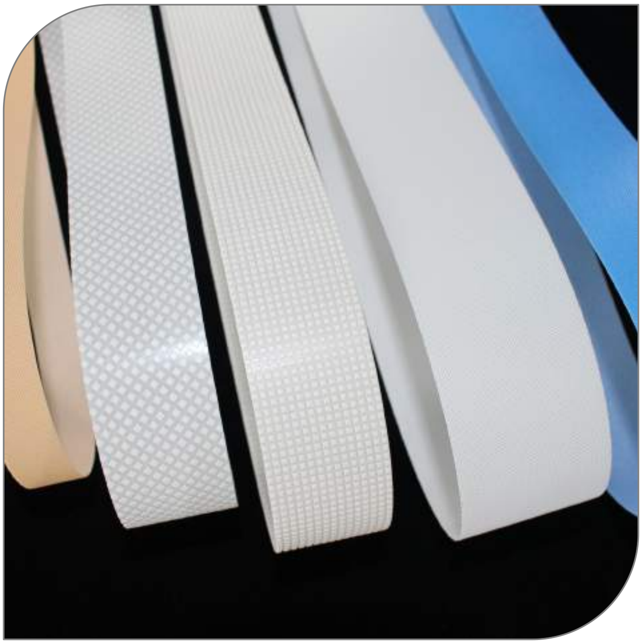
Grinding and cleaning of On-cell, ITO and OLED glass

Features

- **High Cleaning Yield:**
  The product function grinding layer is flat and soft, combined with the design of the elastic buffer layer in the structure, delivering stable performance and high grinding yield during processes.

- **Nice Anti-scratch Effect:**
  The grinding layer has a chip storage structure, and the product surface is designed with spiral open-loop grooves, which can effectively guide the chip discharge and effectively avoid scratching.

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

Grit Size/Abrasive	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	Belt	15mm×838mm、30mm×1600mm		
	Grooved sheet	55mm×74mm、55mm×80mm、55mm×100mm、55mm×140mm		

Remark: Customizations are available upon requests.

Applications

- LCD panel

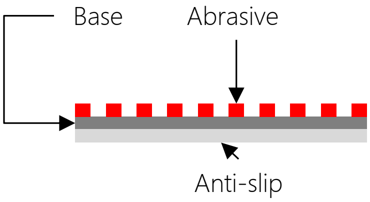
- Glass Scratches repair

- 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	Lapping, rough polishing and back thinning of sapphire and SiC wafer substrate.
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	≤4.40	
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 (MD) is made of high quality diamond through crushing, shaping, grading and other processes. Monocrystalline Diamond powder has sharp edge and high hardness. According to different strength, the MD Powder is divided into MBD and RVD series.

Specification

Model	D50 (μm)	Model	D50 (μm)
D 40-60	46±3	D 4-8	4.9±0.4
D 20-40	28±3	D 2-4	3.0±0.3
D10-20	15±2	D 1-3	1.6±0.2
D 6-10	8.4±0.5	D 0-2	1.1±0.2
D 5-9	7.4±0.4	D 0.5-1	0.7±0.1

Remark: Customizations are available upon requests.

Applications

◆ Hard material

- Metal mold

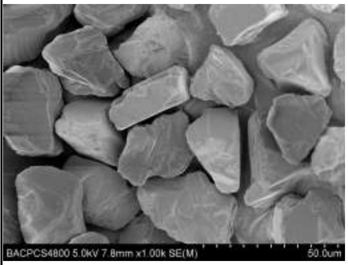
- Gemstone

- Ceramic

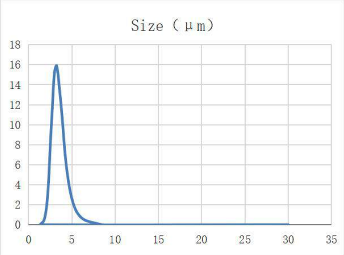
- Optical glass & crystal

Features

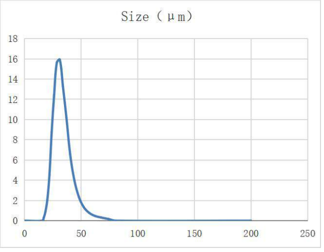
- ◆ Rich Variety: MBD series products are gray to white in color and can be divided into A, B and C types according to their strength;
- ◆ Low Scratches: The color of RVD series products ranges from gray to gray-green, with good self-sharpening properties, it is unlikely to produce scratches;
- ◆ Uniform Abrasives: The product has massive crystal shape and concentrated particle size distribution to achieve consistent finish;
- ◆ High Purity: High product purity, impurity content less than 0.5%.



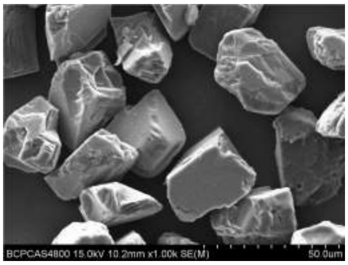
MBD-A Series



MBD-A 2-4

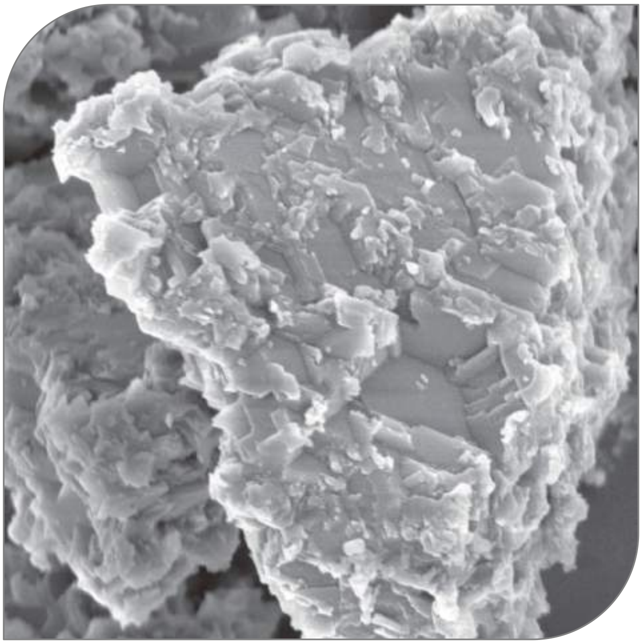


RVD 20-40



RVD Series

◆ 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.

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

- Higher Removal Rate:

Compared with monocrystalline diamond powder, RCD powder has a rougher surface, and the abrasives fully contact with the workpiece, which can effectively improve the grinding efficiency.

- Long Life:

Compared with monocrystalline diamond powder, RCD powder can maintain high grinding force and long lapping life.

- Less Scratches:

There are a large number of small cutting chins on the abrasives, which can reduce surface roughness and avoid scratches.

Applications

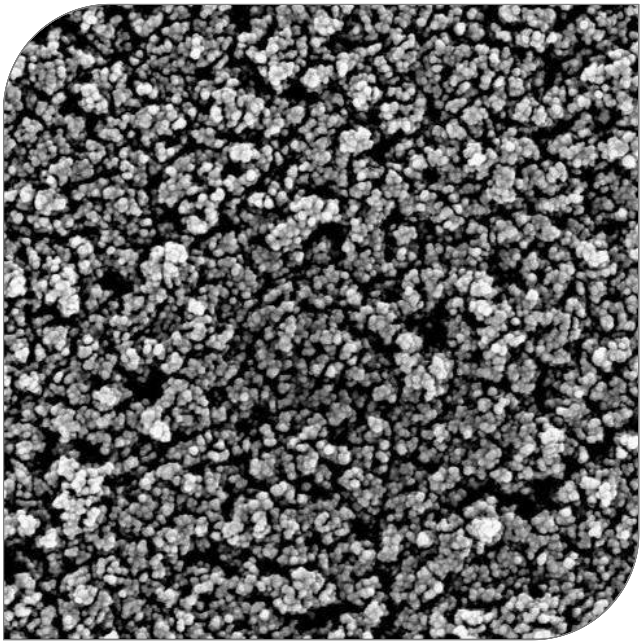
- Optical glass & crystal

- 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 dia-mond, the shape of DND is sphere without sharp edges and the micro crystal size is about 4-7nm.

Specification

Model	Grit Size（D50）	Impurities Content
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

◆ Large Specific Surface Area:
Small granularity of the product, specific surface area up to 300- 420m2/g.

◆ Good Dispersibility:
Small particle size, in the dispersion medium, can maintain good dispersion and suspension, not easy to precipitate.

◆ High Processing Precision:
Excellent ultra-fine polishing effect, can make the surface roughness of the workpiece reach below 0.2nm.

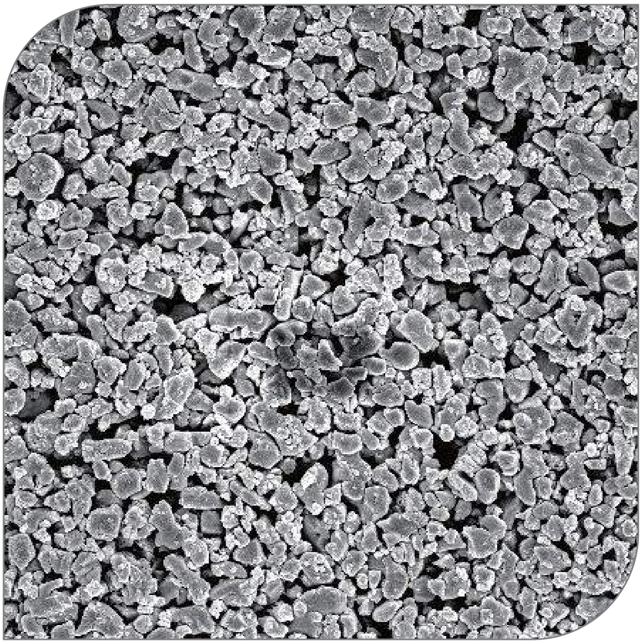
Applications

◆ 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	13.5μm-16.5μm
	GC4000	3.0μm-3.8μm
	GC10000	0.3μm-0.7μm
Aluminum Oxide (AO)	AO10000	0.4μm-0.6μm
	AO15000	0.25μm-0.4μm
Cerium Oxide (CO)	CO2	1.9μm-2.3μm
	CO1.5	1.1μm-1.5μm
	CO1	0.8μm-1.2μm
	CO0.5	0.5μm-0.8μm

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

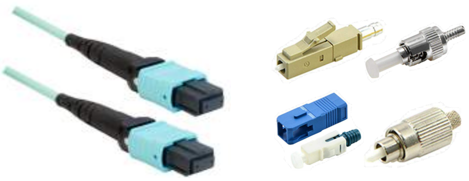
- Semiconductor

- Optical glass & crystal

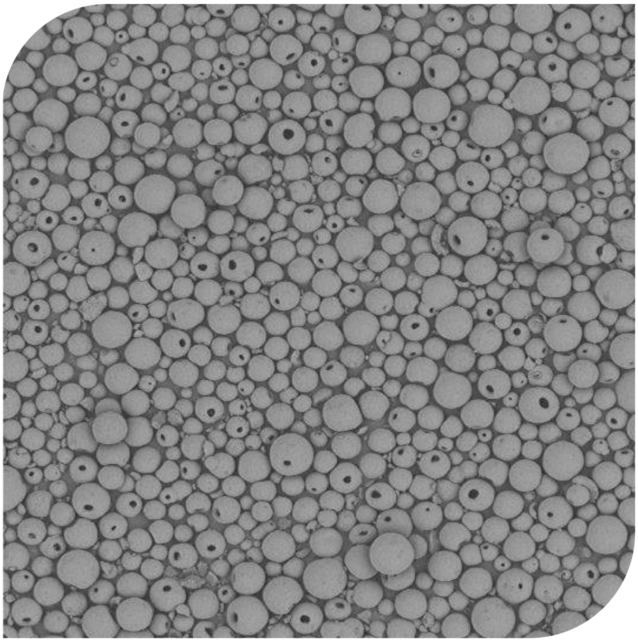
- Hard disk

- 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 perfor-mance, 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.

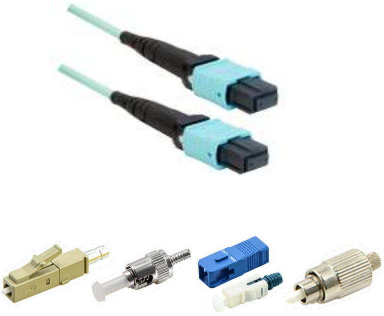
Features

- **Unique Prepolymer Structure:** The product has better self-sharpening, higher grinding force and longer service life during use.
- **Good Surface Polishing Quality:** During the use of the product, the prepolymer will break down to form new small particles to participate in grinding and polishing to achieve a good polishing surface.

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

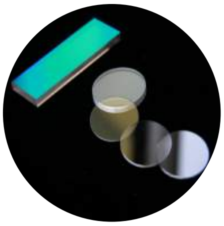
Remark: Customizations are available upon requests.

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

Mono-crystalline diamond slurry is widely used for grinding and polishing hard materials because of its high grinding power and low cost of processing.

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

RCD diamond slurry is produced with our own RCD diamond powder and advanced dispersion technology to provide a diamond slurry that is scratch resistant and has high dispersion stability. It is mainly suitable for polishing sapphire, ceramics, and hard alloys.

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 rough polishing on silicon carbide substrates, chips and 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（D50）	Area of use
Silicon Carbide (SC)	SC-1/2	0.5-1μm	FO Connector, Hard Disk, Ceramics, Hard Alloy, Gems, Optical Glass etc.
	SC-1	0.8-1.2μm	
Aluminum Oxide (AO)	AO-1/3	0.2-0.4μm	FO Connector, Crystals(Si, Ge, GaAs, InP, SiC), Hard alloy, Steel, Optical Glass etc.
	AO-1/2	0.4-0.6μm	
	AO-1	0.8-1.2μm	
	AO-2	1.6-2.4μm	
	AO-3	2.6-3.6μm	
Cerium Oxide (CO)	CO-1/3	0.2-0.4μm	FO Connector, Lens ,Hard Alloy, Gems, Optics Glass etc.
	CO-1/2	0.4-0.6μm	
	CO-1	0.8-1.2μm	
	SC-A3A1	-	Silicon Carbide Substrates and Chips
Package	250ml, 500ml, 1litre, 1gallon		

Remark: Customizations are available upon requests.

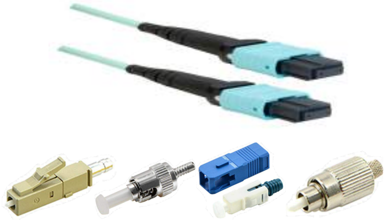
Applications

- Optical glass & crystal

- Hard disk

- Hard alloy

- Fiber Optical Connectors



- Silicon Carbide Substrates, Chips

Handling and Storage

- Shake the bottle before using.
- Keep storage temperature at 0-35℃.

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.

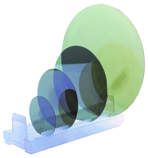
Specification

Model	Grit size	Particle appearance	pH	Viscosity	Concentration
SO-100-PF	90nm-120nm	Spherical	10.5±0.5	<20cst	20%
SO-80-PF	70nm-90nm			<10cst	20-50%
SO-60-PF	50nm-70nm				
SO-40-PF	30nm-50nm				
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



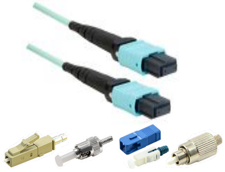
- Sapphire · LED material

- Stainless steel

- Optical glass & crystal

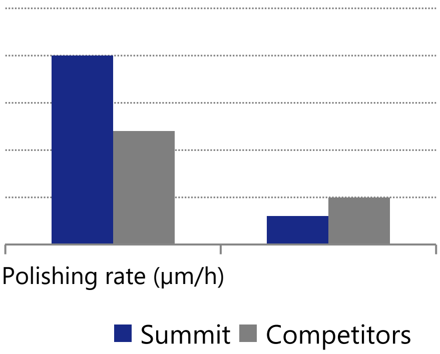
- Aluminum nitride heat sink substrate

- Optical communication



Features

- Uniform spherical SiO_2 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℃).



Lapping Agent for B_4C

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

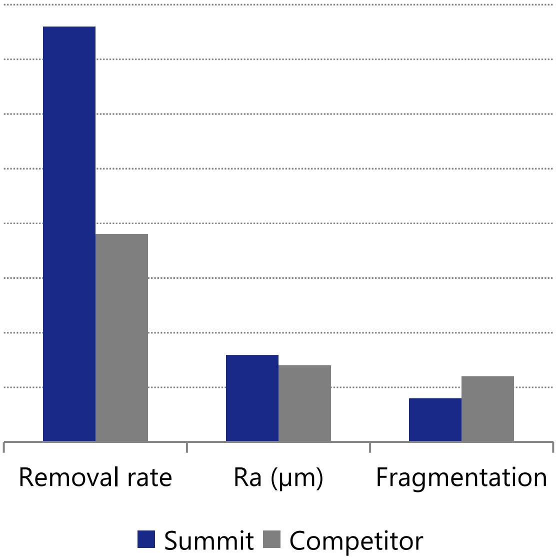
- Ceramic

- Sapphire and SiC wafer

*Since it may vary depending on the processing conditions, please contact us for details.

Features

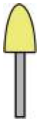
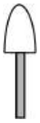
- Enhancing removal rate.
- Making B4C used more cycles.
- Reducing fragmentation rate and getting good TTV.
- Cooling and lubricating wafers while lapping process.
- Good dispersion keeping B4C from precipitation.



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 		

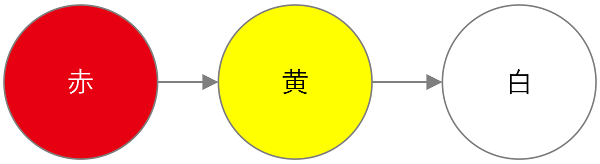
Applications

- ◆ 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



赤 → 黄 → 白

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.
Choose the grit sizes from coarse to fine to use.

Specification

Colors	Name	Grit size(um)	Base material	Abrasive material	Specification
Purple/Blue/Green/Pink	Polishing strip	50(Purple)/30(Blue)/20(Green)/12(Pink)	PET	Alumina	4mm * 152mm
	Polishing disk				φ=14mm、12mm、8mm
Blue/Green/Yellow/White	Polishing strip	60(Blue)/40(Green)/30(Yellow)/12(White)			4mm * 152mm
	Polishing disk				φ=14mm、12mm、8mm
Grey/Brown/Orange/White	Polishing strip	60(Grey)/40(Brown)/20(Orange)/12(White)			4mm * 152mm
	Polishing disk				φ=14mm、12mm、8mm

Removal Rate

Grit size	W60	W50	W40	W30	W20	W12
Removal Rate (mg/12min)	⩾210mg	⩾180mg	⩾150mg	⩾110mg	⩾50mg	⩾22mg

Remark: Customizations are available upon requests.

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.
- The hose polishing disks have two-sided abrasives, convenient to use.
- High removal rate to save your time.

Applications

- Composite resin

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℃	Adhesive strength at 25℃	Size
Normal temperature	SW-TA1	Light yellow solid	62℃-68℃	1.063±0.02 g/cm³	> 20kgf/cm²	100g Cuboid
High temperature	SW-TB1		78℃-85℃			
Alcohol-soluble solid wax	SW-CR7		70℃-80℃		> 30kgf/cm²	
	SW-CR8		70℃-80℃			

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

- Stable quality, no residual foreign matter or air bubbles.
- Good adhesion accuracy and excellent fixing effect.
- Excellent flatness of wafer after polishing.

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℃)	23.79	21.46
Solid content	30%	38%
Softening temperature	70℃	87℃
Specific gravity at 25℃	0.942	0.905
Recommended mounting temperature	120℃	
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 eco-friendly cleaner that can remove the wax layer on the surface of the part very well. It is a mild chemical liquid, non-toxic and harmless, but has a strong cleaning ability. It is a very common cleaning solution in the field of LED and window chips.

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℃	>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			

*Since it may vary depending on the processing conditions, please contact us for details.

Applications

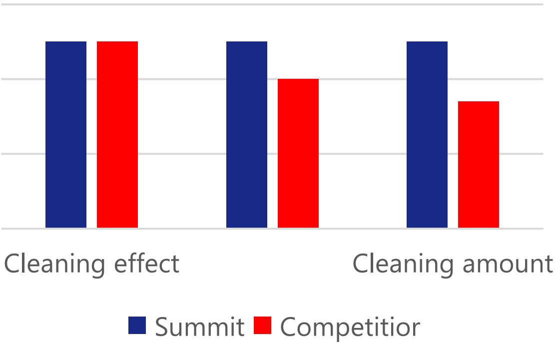
- Optical glass & crystal

- 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.



Diamond Compound

Grish iamond compound 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

	Appearance		Area of use
Grit size	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

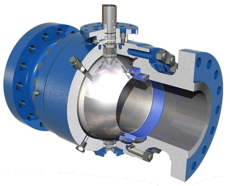
- Consistent grinding and polishing performance with stable quality.
- Polycrystalline diamond paste makes finer surface than monocrystalline diamond paste at same grit.
- Customized paste is available upon request.

Applications

- Die and mould polishing

- Metallography polishing

- Spherical valve



- Metal

- Zirconia teeth

Micron (μm) and Mesh Conversion

Particle size	ASTM	Tyler	GB	BSS	JIS-R-6001	SUMMIT
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	SUMMIT
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	

SUMMIT
super abrasive

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