40 ANIVERSARIO

CIENTEC

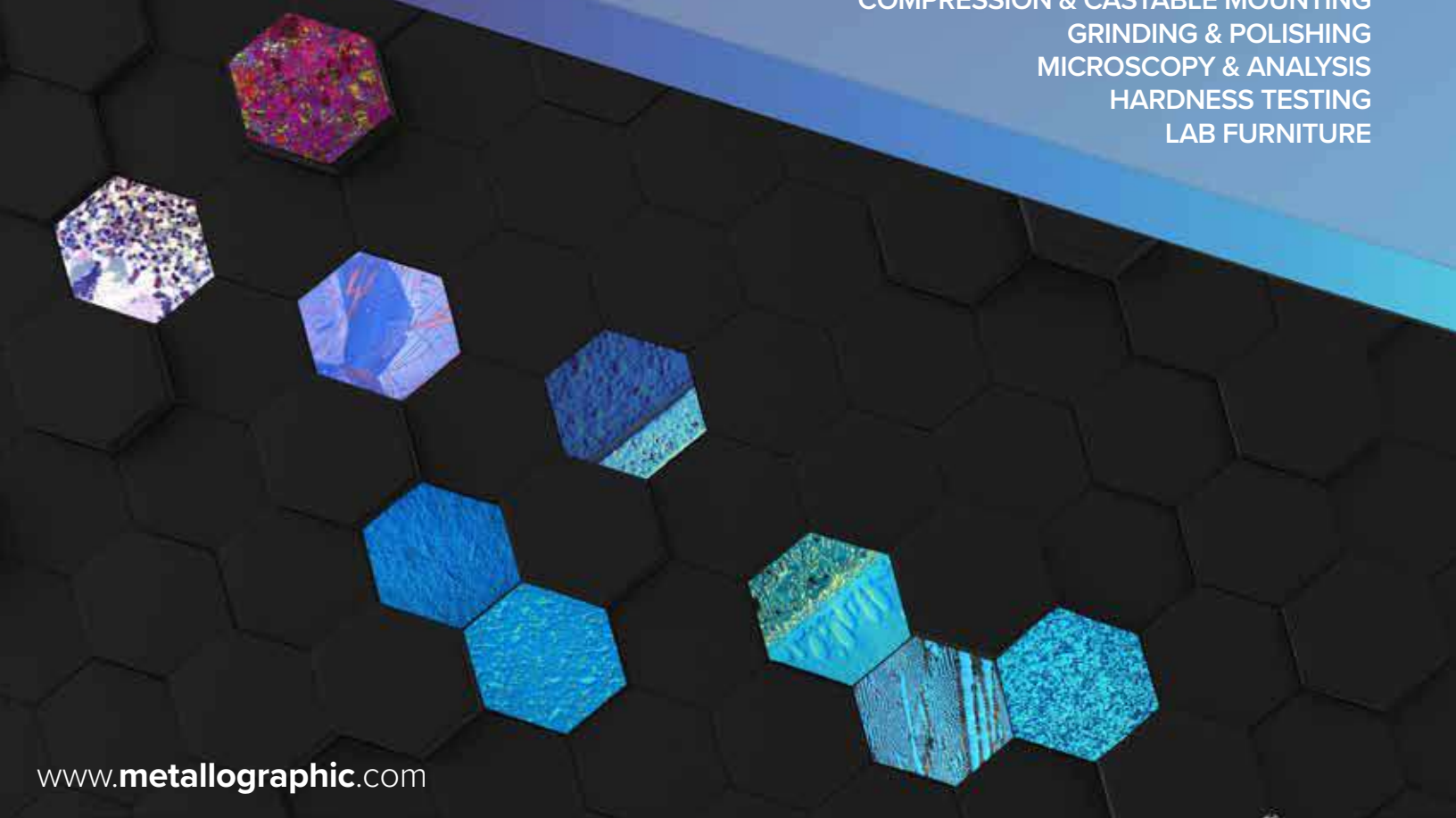
PACE TECHNOLOGIES

WWW.METALLOGRAPHIC.COM

2024 PRODUCT CATALOG

METALLOGRAPHIC EQUIPMENT AND CONSUMABLES

ABRASIVE & PRECISION CUTTING
COMPRESSION & CASTABLE MOUNTING
GRINDING & POLISHING
MICROSCOPY & ANALYSIS
HARDNESS TESTING
LAB FURNITURE



MESSAGE FROM THE CEO:

DONALD ZIPPERIAN, PhD

I am proud to introduce the next generation of excellence here at Pace Technologies!

As a dynamic industry leader, Pace Technologies has ceaselessly pushed the boundaries of quality and customer-centricity for over a quarter century. Our relentless pursuit of perfection has led to cutting-edge equipment that welds state-of-the-art performance with affordability.

This generation of equipment offers our customers enhanced flexibility and control of their sample preparation procedures. These technical upgrades are tempered by our expanding services team who stand ready to provide you with expert guidance for optimal results.

Embracing vertical integration, we've streamlined our supply chain, ensuring unmatched product quality, timeliness, and cost efficiency. Our grinding papers, diamond suspensions, and cutting-edge lubricants are produced in-house to ensure our products meet the highest standards.

It's my hope that our combination of precision, innovation, and customer centricity converges to demonstrate that **quality matters** at Pace Technologies, in every sense of the phrase.

TABLE OF CONTENTS

ABRASIVE CUTTING 2
- METALLOGRAPHIC ABRASIVE CUTTERS..... 3
- ABRASIVE CUTTING CONSUMABLES 13
- ABRASIVE CUTTING RECOMMENDATIONS 16

PRECISION SECTIONING 18
- METALLOGRAPHIC WAFERING SAWS.....19
- PRECISION SECTIONING CONSUMABLES 22

COMPRESSION MOUNTING.....26
- COMPRESSION MOUNTING PRESSES 27
- COMPRESSION MOUNTING CONSUMABLES..... 30

CASTABLE MOUNTING 36
- CASTABLE MOUNTING CHAMBER..... 37
- ACRYLIC MOUNTING CONSUMABLES..... 38
- EPOXY MOUNTING CONSUMABLES..... 40
- POLYESTER MOUNTING CONSUMABLES..... 42
- CASTABLE MOLDS & ACCESSORIES..... 43

GRINDING & POLISHING.....44
- METALLOGRAPHIC HAND GRINDERS 45
- ABRASIVE BELTS, POWDERS & ROLLS..... 46
- MANUAL METALLOGRAPHIC POLISHERS 48
- ANCILLARY POLISHING SYSTEMS 52
- AUTOMATED METALLOGRAPHIC POLISHERS..... 54
- VIBRATORY METALLOGRAPHIC POLISHERS 62

GRINDING CONSUMABLES.....64
- SILICON CARBIDE ABRASIVE PAPER 65
- SILICON CARBIDE FOIL SYSTEM..... 80
- DIAMOND GRINDING..... 82
- ABRASIVE LAPPING..... 92
- SPECIALTY ABRASIVE GRINDING SURFACES..... 98

POLISHING CONSUMABLES 100
- METALLOGRAPHIC POLISHING PADS 101
- DIAMOND POLISHING.....110

FINAL POLISHING 120
- POLYCRYSTALLINE ALUMINA 121
- ALUMINA SLURRIES..... 122
- ALUMINA POWDERS..... 124
- CMP ABRASIVES 125
- COLLOIDAL SILICA..... 126

CLEANING.....127

ETCHING.....128

HARDNESS TESTING 132
- MICROHARDNESS TESTERS 133
- HARDNESS TESTING CONSUMABLES 136
- ROCKWELL HARDNESS TESTERS 138
- AUTOMATED ROCKWELL TESTERS 142
- BRINELL TESTERS 144
- MACRO VICKERS TESTERS 146

METALLOGRAPHIC MICROSCOPY 148

IMAGE ANALYSIS SOFTWARE.....152
- METALLOGRAPHIC SOFTWARE..... 153
- WELD CHECK & HARDNESS PRO SOFTWARE 154

LABORATORY FURNITURE.....156

METALLOGRAPHIC PROCEDURES 160

INDEX.....173

Manual MEGA Abrasive Cutter Options

MODEL	Blade Diameter	Wheel Feed	Manual Y-Table	Voltage (options)	Max Motor Power
MEGA-M250S	10-inch (250 mm)	Yes	n.a.	220V single phase 208Y/380V/480V, 3φ	3 hp (2.2KW)
MEGA-T250S	10-inch (250 mm)	Yes	Yes	208Y/380V,480V 3φ 480V, 3φ	5.8 hp (4.5 KW) OR 7.3 hp (5.5 KW)
MEGA-T300S	12-inch (305 mm)	Yes	Yes	208Y/380V/480V, 3φ 480V, 3φ	5.8 hp (4.5 KW) OR 20 hp (15 KW)
MEGA-T350S	14-inch (350 mm)	Yes	Yes	208Y/380V/480V, 3φ 480V, 3φ	5.8 hp (4.5 KW) OR 20 hp (15 KW)
MEGA-T400S	16-inch (405 mm)	Yes	Yes	480V, 3φ	20 hp (15 KW)

MEGA M250S

10-inch MANUAL Wheel Feed Metallographic Abrasive Cutter

NEW

MEGA T400S

16-inch MANUAL Metallographic Abrasive Cutter

MEGA T350S

14-inch MANUAL Metallographic Abrasive Cutter

MEGA T300S

12-inch MANUAL Metallographic Abrasive Cutter

MEGA T250S

10-inch MANUAL Table/Wheel Feed Metallographic Abrasive Cutter

METALLOGRAPHIC ABRASIVE CUTTERS

Automated MEGA Abrasive Cutter Options

MODEL	Blade Diameter	Auto/ Manual Y-Table	Auto X-Table	Voltage Options	Max Motor Power
MEGA-T300A	12-inch (305 mm)	Yes	Optional	208Y/380V/480V 480V, 3φ	5.8 hp (4.5 KW) OR 20 hp (15 KW)
MEGA-T350A	14-inch (350 mm)	Yes	Optional	208Y/380V/480V 480V, 3φ	5.8 hp (4.5 KW) OR 20 hp (15 KW)
MEGA-T400A	16-inch (405 mm)	Yes	Optional	208Y/380V/ 480V, 3φ	20 hp (15 KW)

Options:

- **Choose the machine that accommodates your preferred blade diameter**
- **Add an automated X-axis Table for maximum flexibility on cuts**
- **Choose between voltage options to provide the exact amount of power you need**

2 year warranty
Limited Warranty

Benefits:

- Constant torque variable speed Servo Motor (3-phase)
- Manual or automated Y-Axis table feed
- X-axis tables have automated X-axis control
- Programming options for constant feed rate or constant motor load for better control
- Twin t-slotted stainless steel table
- Electronic braking system

REQUEST A QUOTE
www.metallographic.com

MEGA T400A

16-inch AUTOMATED/MANUAL Metallographic Abrasive Cutter

MEGA T350A

14-inch AUTOMATED/MANUAL Metallographic Abrasive Cutter

MEGA T300A

12-inch AUTOMATED/MANUAL Metallographic Abrasive Cutter

CE Machinery Directive 2006/42/EC

NEW

MEGA-M250S

MEGA M250S

10-inch MANUAL Wheel Feed
Metallographic Abrasive Cutter

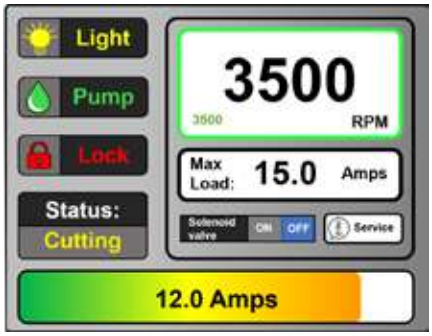
- Manual Cutting
- Economical
- 3-phase Asynchronous motor (220V single phase or 208Y/380V/480V, 3-phase)
- Variable speed cutting
- Wheel feed cutting
- T-slot table fixturing
- Touch screen control

MEGA-T250S

MEGA T250S

10-inch MANUAL Wheel / Table Feed
Metallographic Abrasive Cutter

- Manual Cutting
- High torque servo motor
- Variable speed cutting
- Table and Wheel feed cutting
- T-slot table fixturing
- Touch screen control



10-inch Metallographic Abrasive Cutter

FEATURE	MEGA-M250S DESCRIPTION	MEGA-T250S DESCRIPTION
Cut-off blade size	10-inch (~250 mm)	10-inch (~250 mm)
Arbor size	32 mm	32 mm
Cutting capacity (H X D)	Maximum 2 x 4-inch (50 x 100 mm)	Maximum 2 x 8-inch (50 x 200 mm)
Cutting capacity	Maximum diameter 2.5-inch (65 mm)	Maximum diameter 3-inch (75 mm)
Wheel feed	Manual	Manual
Table feed	n.a.	Manual
Y pulse feed	n.a.	Manual
Y constant feed	n.a.	Manual
Vertical movement (z-axis)	3.25-inch (82 mm)	3.9-inch (100 mm)
Table feed movement (y-axis)	n.a.	3.3-inch (84 mm)
Table movement (x-axis) for parallel cuts	n.a.	n.a.
T-slotted table dimensions	9.75 x 9-inch (250 x 230 mm)	11 x 18.25-inch (280 x 470 mm)
T-slotted width	0.5-inch (50 mm)	0.5-inch (50 mm)
Operation	Manual	Manual
Cooling unit	14 gallons (53 liters)	14 gallons (53 liters)
Motor power	Asynchronous 3 phase motor speed - 2.2 KW/(3 hp)	Constant torque variable speed servo motor - 4.5 KW/(5.8 hp)
Motor speed	Variable (300-3000 rpm)	Variable (1500-3500 rpm)
Electrical specification	220V single phase 208Y / 380V or 480V, 3φ (50/60 Hz)	208Y / 380V or 480V, 3φ (50/60 Hz)
Cutting force (current settings)	15 amps (max)	3-15 amps (Adjustable)
Dimensions (WxDxH)	Hood closed: 29.5 x 27 x 28-inch (750 x 685 x 720 mm) Hood open: 29.5 x 27 x 39-inch (750 x 685 x 990 mm)	Hood closed: 35.5 x 32 x 28-inch (900 x 815 x 710 mm) Hood open: 35.5 x 32 x 39-inch (900 x 815 x 990 mm)
Weight	240 lbs (110 kg)	375 lbs (170 kg)
Cutter Support Bench (optional)	MEGA-T2-BENCH	MEGA-T2-BENCH
Catalog Number	MEGA-M250S	MEGA-T250S

2 year warranty
Limited Warranty

Benefits:

- Non-touch screen control
- Wheel and table feed controlled cutting
- Cutting capacity up to 3-inches (75 mm) solid stock sample using 10-inch (250 mm) blade
- Variable speed control
- High leverage handle for better control
- Variable speed motors
- Twin t-slotted stainless steel table
- Electronic braking system

REQUEST A QUOTE
www.metallographic.com

CE Machinery Directive 2006/42/EC

MEGA-T300S

MEGA T300S

12-inch MANUAL
Metallographic Abrasive Cutter

- Manual Cutting
- High torque servo motor
- Variable speed cutting
- Wheel and table feed cutting
- T-slot table fixturing
- Touch screen control

MEGA-T300A

MEGA T300A

12-inch AUTOMATED
Metallographic Abrasive Cutter

- Automated / Manual Cutting
- Auto / Manual y-axis feed (optional Auto X-axis feed)
- High torque servo motor
- Variable speed cutting
- Wheel and table feed cutting
- Constant feed or constant cutting force control
- T-slot table fixturing
- Touch screen control

12-inch Metallographic Abrasive Cutter

FEATURE	MEGA-T300S DESCRIPTION	MEGA-T300A DESCRIPTION
Cut-off blade size	12-inch (305 mm)	12-inch (305 mm)
Operation	Manual	Auto / Manual
Screen	Non-touch	Non-touch
Arbor size	32 mm	32 mm
Cutting capacity (H X D)	Maximum 3 x 8-inch (70 x 200 mm)	Maximum 3 x 8-inch (70 x 200 mm)
Cutting capacity	Maximum diameter 4-inch (100 mm)	Maximum diameter 4-inch (100 mm)
Wheel feed	Manual	Manual
Table feed	Manual	Auto / Manual
Y pulse feed	Manual	Auto
Y-axis Table feed -Range -Speed (feed rate)	7-inch (180 mm) n.a.	7-inch (180 mm) 0.04 to 0.20-inch/second (1-10 mm/second)
X-axis Table feed -Range -Speed (feed rate)	n.a. n.a.	OPTIONAL: 1.8-inch (45 mm) 0.04 to 0.07-inch/second (1-2 mm/second)
Vertical movement (z-axis)	7-inch (175 mm)	7-inch (175 mm)
T-slotted table dimensions	11 x 18.25-inch (280 x 470 mm)	11 x 18.25-inch (280 x 470 mm)
T-slotted width	0.5-inch (50 mm)	0.5-inch (50 mm)
Cooling unit	14 gallons (53 liters)	14 gallons (53 liters)
Motor power	Constant torque variable speed Servo Motor, 3φ (50/60 Hz): - 4.5 KW/(5.8 hp) 208Y, 380Y, 480V -15 KW (20 hp) 480V	Constant torque variable speed Servo Motor, 3φ - 4.5 KW/(5.8 hp) 208Y, 380Y, 480V -15 KW (20 hp) 480V
Motor speed	Variable (1500-3500 rpm)	Variable (1500-3500 rpm)
Cutting force (current settings)	3-15 amps (208Y/380V) 5-20 amps (480V)	3-15 amps (208Y/380V) 5-20 amps (480V)
Electrical specification	208Y / 380V or 480V 3-phase (50/60 Hz)	208Y / 380V or 480V 3-phase (50/60 Hz)
Dimensions (WxDxH)	Hood closed: 42 x 42 x 30-inch (1070 x 1070 x 760 mm) Hood open: 42 x 42 x 36.5-inch (1070 x 1070 x 930 mm)	Hood closed: 42 x 42 x 30-inch (1070 x 1070 x 760 mm) Hood open: 42 x 42 x 36.5-inch (1070 x 1070 x 930 mm)
Weight	500 lbs (230 kg)	500 lbs (230 kg)
Cutter Support Bench (optional)	MEGA-T3-BENCH	MEGA-T3-BENCH
Catalog Number	MEGA-T300S	MEGA-T300A

2 year warranty
Limited Warranty

Benefits:

- Non-touch screen control
- Wheel and table feed controlled cutting
- Cutting capacity up to 4-inches (110 mm) solid stock sample using 12-inch (300 mm) blade
- Variable speed control
- High leverage handle for better control
- Constant torque variable speed Servo Motor
- 5.8 hp (4.5 kW) (208V, 380V, 480V 3-phase)
- 20 hp (15 KW) (480V 3-phase)
- Twin t-slotted stainless steel table
- Electronic braking system

REQUEST A QUOTE
www.metallographic.com

CE Machinery Directive 2006/42/EC

MEGA-T350S

MEGA T350S

14-inch MANUAL
Metallographic Abrasive Cutter

- Manual Cutting
- High torque servo motor
- Variable speed cutting
- Wheel and table feed cutting
- T-slot table fixturing
- Touch screen control

MEGA-T350A

MEGA T350A

14-inch AUTOMATED
Metallographic Abrasive Cutter

- Automated / Manual Cutting
- Auto / Manual y-axis feed (optional Auto X-axis feed)
- High torque servo motor
- Variable speed cutting
- Wheel and table feed cutting
- Constant feed or constant cutting force control
- T-slot table fixturing
- Touch screen control

14-inch Metallographic Abrasive Cutter

2 year warranty
Limited Warranty

FEATURE	MEGA-T350S DESCRIPTION	MEGA-T350A DESCRIPTION
Cut-off blade size	14-inch (350 mm)	14-inch (350 mm)
Operation	Manual	Auto / Manual
Screen	Non-touch	Non-touch
Arbor size	32 mm	32 mm
Cutting capacity (H X D)	Maximum 3 x 6-inch (70 x 150 mm)	Maximum 3 x 6-inch (70 x 150 mm)
Cutting capacity	Maximum diameter 4.5-inch (115 mm)	Maximum diameter 4.5-inch (115 mm)
Wheel feed	Manual	Manual
Table feed	Manual	Auto / Manual
Y pulse feed	Manual	Auto
Y-axis Table feed -Range -Speed (feed rate)	7-inch (180 mm) n.a.	7-inch (180 mm) 0.04 to 0.20-inch/second (1-10 mm/second)
X-axis Table feed -Range -Speed (feed rate)	n.a. n.a.	OPTIONAL: 1.8-inch (45 mm) 0.04 to 0.07-inch/second (1-2 mm/second)
Vertical movement (z-axis)	3-inch (75 mm)	5.5inch (140 mm)
T-slotted table dimensions (WxD)	28 x 16-inch (710 x 400 mm)	28 x 16-inch (710 x 400 mm)
T-slotted width	0.5-inch (50 mm)	0.5-inch (50 mm)
Cooling unit	14 gallons (53 liters)	14 gallons (53 liters)
Motor power	Constant torque variable speed Servo Motor, 3φ - 4.5 KW/(5.8 hp) 208Y, 380Y, 480V -15 KW (20 hp) 480V	Constant torque variable speed Servo Motor, 3φ - 4.5 KW/(5.8 hp) 208Y, 380Y, 480V -15 KW (20 hp) 480V
Motor speed	Variable (1000-3000 rpm)	Variable (1000-3000 rpm)
Cutting force (current settings)	3-15 amps (208Y/380V) 5-20 amps (480V)	3-15 amps (208Y/380V) 5-20 amps (480V)
Electrical specification	208Y / 380V or 480V 3-phase (50/60 Hz)	208Y / 380V or 480V 3-phase (50/60 Hz)
Dimensions (WxDxH)	Hood closed: 42 x 42 x 64-inch (1070 x 1070 x 1625 mm) Hood open: 42 x 42 x 70-inch (1070 x 1070 x 1780 mm)	Hood closed: 42 x 42 x 64-inch (1070 x 1070 x 1625 mm) Hood open: 42 x 42 x 70-inch (1070 x 1070 x 1780 mm)
Weight	650 lbs (300 kg)	650 lbs (300 kg)
Catalog Number	MEGA-T350S	MEGA-T350A

Benefits:

- Non-touch screen control
- Wheel and table feed controlled cutting
- Cutting capacity up to 4.5 inches (115 mm) solid stock sample using 14-inch (350 mm) blade
- Variable speed control
- High leverage handle for better control
- Constant torque variable speed Servo Motor
- 5.8 hp (4.5 kW) (208V, 380V, 480V 3-phase)
- 20 hp (15 KW) (480V 3-phase)
- Twin t-slotted stainless steel table
- Electronic braking system

REQUEST A QUOTE
www.metallographic.com

15 KW (20 hp)MEGA 480V 3-phase motor

4.4 KW (5.8 hp) and 5.5 KW (7.3 hp) MEGA 3-phase motor

CE Machinery Directive 2006/42/EC

MEGA-T400S

MEGA T400S

16-inch MANUAL
Metallographic Abrasive Cutter

- Manual Cutting
- High torque servo motor
- Variable speed cutting
- Chop and table feed cutting
- T-slot table fixturing
- Touch screen control

MEGA-T400A

MEGA T400A

16-inch AUTOMATED
Metallographic Abrasive Cutter

- Automated / Manual Cutting
- Auto / Manual y-axis feed (optional Auto X-axis feed)
- High torque servo motor
- Variable speed cutting
- Wheel and table feed cutting
- Constant feed or constant cutting force control
- T-slot table fixturing
- Touch screen control

16-inch Metallographic Abrasive Cutter

2 year warranty
Limited Warranty

FEATURE	MEGA-T400S DESCRIPTION	MEGA-T400A DESCRIPTION
Cut-off blade size	16-inch (400 mm)	16-inch (400 mm)
Operation	Manual	Auto / Manual
Screen	Non-touch	Non-touch
Arbor size	32 mm	32 mm
Cutting capacity (H X D)	Maximum 3 x 6-inch (70 x 150 mm)	Maximum 3 x 6-inch (70 x 150 mm)
Cutting capacity	Maximum diameter 6-inch (150 mm)	Maximum diameter 6-inch (150 mm)
Wheel feed	Manual	Manual
Table feed	Manual	Auto / Manual
Y pulse feed	Manual	Auto
Y-axis Table feed **-Range** **-Speed (feed rate)**	7-inch (180 mm) n.a.	7-inch (180 mm) 0.04 to 0.20-inch/second (1-10 mm/second)
X-axis Table feed **-Range** **-Speed (feed rate)**	n.a. n.a.	OPTIONAL: 1.8-inch (45 mm) 0.04 to 0.07-inch/second (1-2 mm/second)
Vertical movement (z-axis)	5-inch (125 mm)	5-inch (125 mm)
T-slotted table dimensions	11 x 18.25-inch (280 x 470 mm)	11 x 18.25-inch (280 x 470 mm)
T-slotted width	0.5-inch (50 mm)	0.5-inch (50 mm)
Cooling unit	14 gallons (53 liters)	14 gallons (53 liters)
Motor power	Constant torque variable speed Servo Motor, 3φ -15 KW (20 hp) 480V	Constant torque variable speed Servo Motor, 3φ -15 KW (20 hp) 480V
Motor speed	Variable (1000-3000 rpm)	Variable (1000-3000 rpm)
Cutting force (current settings)	5-20 amps (480V)	5-20 amps (480V)
Electrical specification	480V 3-phase (50/60 Hz)	480V 3-phase (50/60 Hz)
Dimensions (WxDxH)	Hood closed: 48 x 51 x 63.5-inch (1220 x 1300 x 1610 mm) Hood open: 48 x 51 x 66-inch (1220 x 1300 x 1665 mm)	Hood closed: 48 x 51 x 63.5-inch (1220 x 1300 x 1610 mm) Hood open: 48 x 51 x 66-inch (1220 x 1300 x 1665 mm)
Weight	880 lbs (400 kg)	880 lbs (400 kg)
Catalog Number	MEGA-T400S	MEGA-T400A

Benefits:

- Touch screen control
- Wheel and table feed controlled cutting
- Cutting capacity up to 6 inches (150 mm) solid stock sample using 16-inch (400 mm) blade
- Variable speed control
- High leverage handle for better control
- Constant torque variable speed Servo Motor -20 hp (15 KW) (480V 3-phase)
- Twin t-slotted stainless steel table
- Electronic braking system

REQUEST A QUOTE
www.metallographic.com

CE Machinery Directive 2006/42/EC

MEGA Vises

Left Cam Lock Vise

Quick release clamping vise (left hand)
Catalog no. QCL-1000-250 & QCL-1000

Right Cam Lock Vise

Quick release clamping vise (right hand)
Catalog no. QCR-1000-250 & QCL-1000

Back Support

Back support plate for Quick Release clamping vises
Catalog no. QCB-1000-250 & QCB-1000

Back Support

Back support plate for Quick Release clamping vises
Catalog no. QCB-1000-300R

MEGA Cam Locking Vise Recommendations	MEGA-M250S	MEGA-T250S	MEGA-T300	MEGA-T350	MEGA-T400
Left cam vise	QCL-1000	QCL-1000-250	QCL-1000	QCL-1000	QCL-1000
Right cam vise	QCR-1000	QCR-1000-250	QCR-1000	QCR-1000	QCR-1000
Left backstop	QCB-1000	QCB-1000-250	QCB-1000	QCB-1000	QCB-1000
Right backstop	QCB-1000-300R	QCB-1000-250	QCB-1000-300R	QCB-1000-300R	QCB-1000

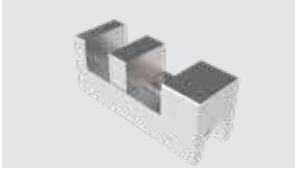
Small Vertical Vise

1.8-inch (45 mm) Vertical clamping vise with shoe for MEGA-T250/300/350
Catalog no. MG-01

Large Vertical Vise

3-inch (75 mm) Vertical clamping vise with shoe for MEGA-T400S
Catalog no. MG-15

Fastener Vise



MEGA fastener vise
Catalog no. MEGA-711

Saddle Vise

MEGA saddle vise
Catalog no. MEGA-702

Universal Vertical Vise

Universal Vertical clamping vise with 65 and extended 95 mm arm (2.5/3.75-inch) and shoe
Catalog no. MG-E

Universal Vertical Height Adapter Block

57 mm (2.25-inch) height adapter for vertical clamping vise
Catalog no. MG-EH

Recommended Cutting Procedures:

- Select the appropriate abrasive blade (abrasive type , bond, hardness, material properties, cutter speed)
- Secure specimen. Improper clamping may result in blade and/or specimen damage
- Check coolant level and replace when low or excessively dirty
- Adjust the abrasive cutter speed to optimize the cutting process. Typically softer metals are cut at slower speeds to reduce the cutting burr or smearing of the metal. Harder samples are cut at medium to high speeds in order to break down the wheel bond in order to expose new / sharp abrasives.
- Allow the abrasive blade to reach its operating speed before beginning the cut
- A steady force or light pulsing action will produce the best cuts and minimize blade wear characteristics, as well as maintain sample integrity (no burning)
- When sectioning materials with coatings, orient the specimen so that the blade is cutting into the coating and exiting out of the base material, thereby keeping the coating in compression

ABRASIVE CUTTING CONSUMABLES

Abrasive Cutting Fluid Recommendations

CUTTING FLUID	APPLICATION	RECOMMENDED DILUTION	CHANGING FREQUENCY
MAXCUT cutting fluid	As a replacement for competitors cutting fluids	25:1 (water)	50 cuts or weekly
MAXCUT2 cutting fluid	Recommended for reducing corrosion in cutting chamber	25:1 (water)	50 cuts or weekly

Tips: Abrasive Cutter Care:

- Use clean/fresh MAXCUT2 cutting fluid; fluid should be changed weekly
- Rinse and dry table and vises after use
- When cutter is not in use open hood to prevent humidity build-up
- If cutter will not be used for an extended period of time, spray table and vises with a water displacement oil such as WD40®

Abrasive Cutting Fluids

PACE Product Name	Catalog Number	Qty	Price ($)
MAXCUT Abrasive Cutting Fluid (32 oz)	**MAXCUT-1000-32**	32 oz	39.50
MAXCUT Abrasive Cutting Fluid (1/2 gallon)	**MAXCUT-1000-64**	1/2 gallon	58.00
MAXCUT Abrasive Cutting Fluid (1 gallon)	**MAXCUT-1000-128**	1 gallon	98.00
MAXCUT Abrasive Cutting Fluid (5 gallons)	**MAXCUT-1000-5G**	5 gallons	260.00
MAXCUT2 Abrasive Cutting Fluid with Anti-corrosion Additive (32 oz)	**MAXCUT2-1000-32**	32 oz	41.50
MAXCUT2 Abrasive Cutting Fluid with Anti-corrosion Additive (1/2 gallon)	**MAXCUT2-1000-64**	1/2 gallon	60.00
MAXCUT2 Abrasive Cutting Fluid with Anti-corrosion Additive (1 gallon)	**MAXCUT2-1000-128**	1 gallon	105.00
MAXCUT2 Abrasive Cutting Fluid with Anti-corrosion Additive (5 gallons)	**MAXCUT2-1000-5G**	5 gallons	275.00
Propylene Glycol Based Corrosion Inhibitor Additive (32 oz)	**PCC-5000-32**	32 oz	28.00

Abrasive Cutting Blades

10-inch (250 mm) MAXCUT Abrasive Blades (32 mm arbor)

Blade Usage	M.O.S.	Catalog Number	Qty	Price ($)
Soft non-ferrous materials (aluminum, brass, zinc, etc.)	3440	**MAX-C250**	10/box	265.00
Hard non-ferrous materials (titanium)	3440	**MAX-C250**	10/box	265.00
Soft steel	4500	**MAX-E250**	10/box	215.00
General purpose resin bonded blade	4580	**MAX-D250**	10/box	215.00
Nickel, Superalloys	4580	**MAX-A250**	10/box	265.00
Very hard heat treated and case hardened ferrous materials (>50 Rc)	3055	**MAX-VHS250**	10/box	355.00
Universal Thin Blade	4580	**MAX-A250**	10/box	265.00
General Industrial Blade	4500	**MAX-I250**	10/box	182.00
180 grit high concentration Diamond Abrasive Blade cutting wheel	6100	**DMAX-250**	each	790.00

10-inch MAX-A250 Abrasive Blade

12-inch (300 mm) MAXCUT Abrasive Blades (32 mm arbor)

Blade Usage	M.O.S.	Catalog Number	Qty	Price ($)
Soft non-ferrous materials (aluminum, brass, zinc, etc.)	3800	**MAX-C300**	10/box	310.00
Hard non-ferrous materials (titanium)	3440	**MAX-C300**	10/box	310.00
Soft steel	3800	**MAX-E300**	10/box	250.00
General purpose resin bonded blade	3820	**MAX-D300**	10/box	250.00
Nickel, Superalloys	3945	**MAX-A300**	10/box	310.00
Very hard ferrous materials (>50 Rc)	2550	**MAX-VHS300**	10/box	380.00
Universal Thin Blade	3945	**MAX-A300**	10/box	310.00
General Industrial Blade	3800	**MAX-I300**	10/box	225.00
180 grit high concentration Diamond Abrasive Blade cutting wheel	5000	**DMAX-305**	each	975.00

12-inch MAX-D300 Abrasive Blade

14-inch (350 mm) MAXCUT Abrasive Blades (32 mm arbor)

14-inch MAX-E350 Abrasive Blade

Blade Usage	M.O.S.	Catalog Number	Qty	Price ($)
Soft non-ferrous materials (aluminum, brass, zinc, etc.)	2460	**MAX-C350**	10/box	405.00
Hard non-ferrous materials (titanium)	2460	**MAX-C350**	10/box	405.00
Soft steel	3200	**MAX-E350**	10/box	340.00
General purpose resin bonded blade	3275	**MAX-D350**	10/box	340.00
Nickel, Superalloys	2730	**MAX-A350**	10/box	405.00
Very hard heat treated and case hardened ferrous materials (>50 Rc)	2200	**MAX-VHS350**	10/box	450.00
Universal Thin Blade	2730	**MAX-A350**	10/box	405.00
General Industrial Blade	3200	**MAX-I350**	10/box	310.00
180 grit high concentration Diamond Abrasive Blade cutting wheel	4350	**DMAX-350**	each	1050.00

16-inch (400 mm) MAXCUT Abrasive Blades (32 mm arbor)

16-inch DMAX-400 Diamond Blade

Blade Usage	M.O.S.	Catalog Number	Qty	Price ($)
Soft non-ferrous materials (aluminum, brass, zinc, etc.)	2390	**MAX-C400**	10/box	465.00
Hard non-ferrous materials (titanium)	2390	**MAX-C400**	10/box	465.00
Soft steel	3800	**MAX-E400**	10/box	445.00
General purpose resin bonded blade	3800	**MAX-D400**	10/box	445.00
Nickel, Superalloys	2860	**MAX-A400**	10/box	465.00
Very hard heat treated and case hardened ferrous materials (>50 Rc)	1925	**MAX-VHS400**	10/box	515.00
Universal Thin Blade	2860	**MAX-A400**	10/box	465.00
General Industrial Blade	3800	**MAX-I400**	10/box	415.00
180 grit high concentration Diamond Abrasive Blade cutting wheel	3800	**DMAX-400**	each	1495.00

ABRASIVE CUTTING RECOMMENDATIONS

APPLICATION	ADVANTAGE	DISADVANTAGE	BLADE COMPOSITION	RECOMMENDED BLADE
General cutting with universal thin resin / rubber bonded blades	Thin durable longer lasting blade for cutting most materials.	Rubber bonded blades can produce a burning rubber smell	Alumina resin-rubber bonded	**MAX-A**
Hard non-ferrous metals (titanium, zirconium, etc.)	SiC abrasives are much more effective in cutting non-ferrous metals	Rubber bonded blades can produce a burning rubber smell	SiC / resin-rubber bonded	**MAX-C**
General purpose blade for steels and ferrous metals	Resin bonded blades break down easily to expose fresh abrasives for cleaner cuts	Generally thicker blades with shorter working life	Alumina / resin bonded	**MAX-D**
Soft non-ferrous metals (aluminum, brass, zinc, etc.)	Resin bonded blades break down easily to expose fresh abrasives for cleaner cuts	Generally thicker blades with shorter working life	Alumina / resin bonded	**MAX-E**
Industrial general purpose reinforced blade	Lower cost, longer life resin bonded blades	Harder resin bond which may result in damaging or burning of the sample during aggressive cutting	Alumina / resin-bonded	**MAX-I**
Heat treated and hardened steels	Specifically designed metallographic abrasive blades to reduce heat damage during sectioning	Resin bonded blades break down faster and therefore have shorter cutting life	Alumina / resin bonded	**MAX-VHS**
Non-metallic materials such as glass, minerals, ceramics and composites	Diamond Blades do not wear down like ceramic abrasives blades	Relatively more expensive	Diamond	**DMAX**

Abrasive Blade Maximum Operating Speed (M.O.S.) (rpm)

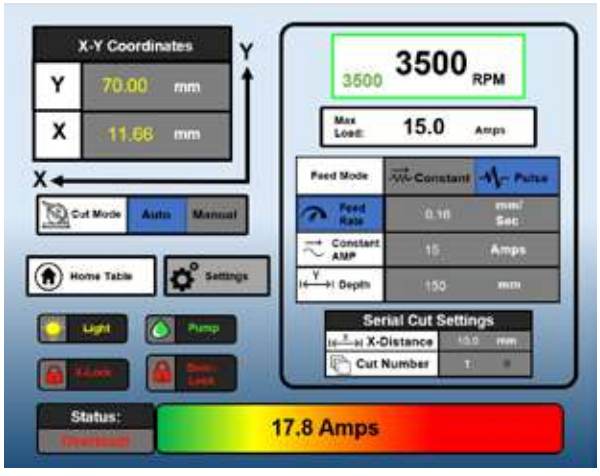
BLADE (M.O.S.)	10-INCH	12-INCH	14-INCH	16-INCH
MAX-A	4580	3945	2730	2860
MAX-C	3440	3440	2460	2390
MAX-D	4580	3820	3275	3800
MAX-E	4500	3800	3200	3800
MAX-I	4500	3800	3200	3800
MAX-VHS	3055	2550	2200	1925
DMAX	6100	5000	4350	3800

TIP: Abrasive Cutting

- Properly fixture or clamp the sample/specimen
- Select the proper abrasive blade
- Set the correct cutting speed
- Use appropriate cutting fluid and direct the flow to the cutting zone
- Cut specimen while monitoring motor amperage. The correct blade will minimize the current draw on the motor
- After completion of the cutting operation, clean and dry the cutter fixtures, table and cutting chamber
- When not in use clean/dry and leave the hood in the open position to prevent corrosion. The use of a water displacement oil cutting fluids will also help prevent corrosion

Abrasive Blade Thickness

BLADE THICKNESS	10-INCH	12-INCH	14-INCH	16-INCH
MAX-A	0.039 in	0.055 in	0.063 in	0.090 in
MAX-C	0.059 in	0.078 in	0.078 in	0.100 in
MAX-D	0.059 in	0.078 in	0.078 in	0.100 in
MAX-E	0.059 in	0.078 in	0.078 in	0.100 in
MAX-I	0.059 in	0.078 in	0.078 in	0.100 in
MAX-VHS	0.075 in	0.078 in	0.098 in	0.100 in
DMAX	0.059 in	0.060 in	0.060 in	0.075 in



MEGA-A Abrasive Cutter Control Screen

MEGA-T400 t-slot table

PICO-155S

PICO-155S

Precision Cutter with Digital Control

- Precise cutting
- 0.17 hp (125 W) Dynamic torque motor
- Microprocessor controlled with touch screen control
- Internal coolant pump
- Digital feedback speed control
- LED interface display
- Highly reproducible, dependable and robust
- Easy to use

PICO-155P

PICO-155P

Precision Cutter with Analog Control

- Precise cutting
- Internal coolant pump
- Digital feedback speed control
- LED speed display with analog control
- Highly reproducible, dependable and robust
- Flexible
- Ideal for all materials
- User friendly

PICO-200

PICO-200

Variable Speed Table Saw

- Digital feedback speed control
- LED speed display
- Highly reproducible, dependable and robust
- Easy to use
- Flexible
- Ideal for all materials
- User friendly
- Easy service access

Low to Medium Speed Metallographic Precision Cutter

2 year warranty
Limited Warranty

FEATURE	PICO-155S DESCRIPTION	PICO-155P DESCRIPTION
Control	5-inch touchscreen with Digital LED display	Analog Buttons and Speed Control
Cutting capacity	Max. diameter 2-inch (50 mm)	Max. diameter 2-inch (50 mm)
Coolant	Dual nozzle with pump	Dual nozzle with pump
Table feed	3-inch (75 mm) - 7-inch (175 mm)	3-inch (75 mm) - 7-inch (175 mm)
Arbor size	0.5-inch (12.7 mm)	0.5-inch (12.7 mm)
Variable Speed (rpm)	200-1500 rpm continuously adjustable with digital speed display	200-1500 rpm continuously adjustable with LED speed display
Cutting Load	0-1500 gram load	0-1500 gram load
Micrometer feed distance	0 to 1-inch (0-25 mm)	0 to 1-inch (0-25 mm)
Micrometer accuracy	2 microns	2 microns
Electrical Specification	110V/220V (50/60 Hz) (single phase)	110V/220V (50/60 Hz) (single phase)
Motor power	125W (24V)	125W (24V)
Dimensions (WxDxH)	19 x 23 x 14.5-inch (48 x 58 x 37 cm) (hood closed) 19 x 29 x 19-inch (48 x 74 x 37 cm) (hood open)	19 x 23 x 14.5-inch (48 x 58 x 37 cm) (hood closed) 19 x 29 x 19-inch (48 x 74 x 37 cm) (hood open)
Weight	66 lbs (30 kg)	66 lbs (30 kg)
Catalog Number	PICO-155S	PICO-155P

Benefits:

- Microprocessor controlled (PICO-155S)
- 200-1500 rpm speeds
- Accepts 3-7 inch (75-175 mm) wafering blades
- Built-in digital micrometer
- Counter balanced loading
- Sliding weight gravity feed loading up to 1500 grams
- Built-in coolant system with internal pump
- Magnetic safety switch
- Emergency stop switch
- Optional cutting table attachment

REQUEST A QUOTE
www.metallographic.com

CE Machinery Directive 2006/42/EC

Variable Speed Metallographic Table Saw

2 year warranty
Limited Warranty

FEATURE	PICO-200 DESCRIPTION
Cut-off blade size	Max. diameter 8-inch (200 mm)
Cutting capacity	1.5-inches (38 mm)
Specimen feed	Table feed
Coolant tank	3 Liters
Arbor size	0.5-inch
Variable Speed (rpm)	300-3000 rpm continuously adjustable with LED speed display
Motor power	1.0 hp (750 W)
Electrical Specification	110V/220V (50/60 Hz) (single phase)
Dimensions (WxDxH)	18 x 20 x 13.8-inch (46 cm x 50 cm x 35 cm)
Weight	93 lbs (420 kg)
Catalog Number	PICO-200

Benefits:

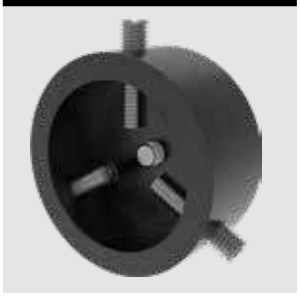
- Variable cutting wheel speeds from 300-3000 rpm
- Hard anodized working table
- Dry or wet cutting
- T-slot clamping vises for mounting versatility

PICO-155P/155S Accessories

32 mm Circular Vise

Sample holder for small round and mounted specimens (1.25-inch / 32 mm)
Catalog no. P150-707

40 mm Circular Vise

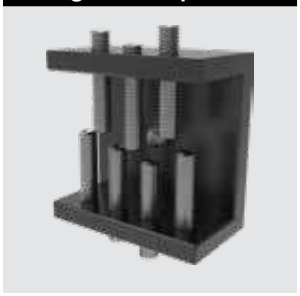


Sample holder for large round and mounted specimens (1.5-inch / 40 mm)
Catalog no. P150-708

Teardrop Vise

Specimen teardrop holder for 0.6-1.6-inch (18-40 mm)
Catalog no. P150-710

Irregular Sample Vise



Sample vise for irregular shaped samples
Catalog no. P150-706

Single Saddle Vise

Universal specimen vise (single saddle)
Catalog no. P150-702

Double Saddle Vise

Sample holder with double parallel vise for long specimens (double saddle)
Catalog no. P150-703

Large Universal Vise

Large single saddle vise with support lip
Catalog no. P150-702b

Adhering Vise

Specimen vise for adhering or gluing samples
Catalog no. P150-709

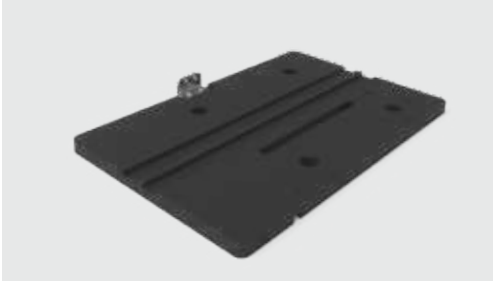
Fastener Vise

Fastener vise for longitudinal sectioning of fasteners, tubes, etc.
Catalog no. P150-711

Dressing Fixture

Dressing stone attachment
Catalog no. P150-701

Cutting Table



Cutting table attachment for manual cutting of flat specimens and PCB's
Catalog no. P150-601

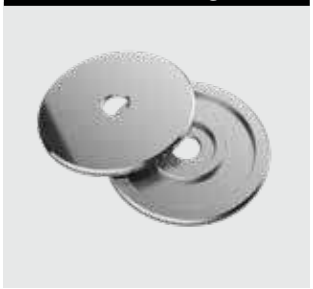
50 mm Flanges

50 mm diameter arbor flanges
Catalog no. P155-M-002

75 mm Flanges

75 mm diameter arbor flanges
Catalog no. P155-M-003

100 mm Flanges



100 mm diameter arbor flanges
Catalog no. P155-M-100

1x3-inch Glass Slide

Vacuum glass slide holder for 1x3-inch petrographic slides
Catalog no. P155-GHL

27x46 mm Glass Slide

Vacuum glass slide holder for 27x46 mm petrographic slides
Catalog no. P155-GHS

Sample Support Arm

Sample support arm with multiple specimen vise positioning locations
Catalog no. P150-407

Swivel Support Arm

Sample support arm with swivel for angular cutting
Catalog no. P150-713

Weight Stack

Stainless steel weight stack components:
Counter balance rod **Catalog no. P150-411**
Counter balance weight **Catalog no. P150-410**
250 gram weight **Catalog no. P155-M-012**
300 gram weight **Catalog no. P155-M-013**

PICO-200 Accessories

Vertical Clamping Vise

PICO 200 vertical clamping vise
Catalog no. P200V

Cutting Guide

PICO 200 cutting guide
Catalog no. P200-ANGLE

PRECISION SECTIONING CONSUMABLES

Metallographic Copper Plated Diamond Blades

Metallographic Stainless Steel Diamond Blades

Electroplated Diamond Blades

3-inch (75 mm) Diamond Blades (1/2-inch arbor, 0.006-inch thick)

PACE Product Name	Catalog Number	Qty	Price ($)
3-inch Diamond Wafering Blade (fine-grit, low conc.)	**WB-0030LC**	each	310.00
3-inch Diamond Wafering Blade (medium-grit, low conc.)	**WB-0035LC**	each	310.00
3-inch Diamond Wafering Blade (medium-grit, high conc.)	**WB-0035HC**	each	310.00
3-inch CBN Wafering Blade (medium-grit, high conc.)	**WCBN-0035**	each	310.00

4-inch (102 mm) Diamond Blades (1/2-inch arbor, 0.012-inch thick)

PACE Product Name	Catalog Number	Qty	Price ($)
4-inch Diamond Wafering Blade (fine-grit, low conc.)	**WB-0040LC**	each	325.00
4-inch Diamond Wafering Blade (medium-grit, low conc.)	**WB-0045LC**	each	325.00
4-inch Diamond Wafering Blade (medium-grit, high conc.)	**WB-0045HC**	each	325.00
4-inch CBN Wafering Blade (medium-grit, high conc.)	**WCBN-0045**	each	325.00
4 x 0.024 x 0.5-inch Electroplated 120-grit Diamond Blade	**WB-040EPD**	each	190.00

5-inch (127 mm) Diamond Blades (1/2-inch arbor, 0.015-inch thick)

PACE Product Name	Catalog Number	Qty	Price ($)
5-inch Diamond Wafering Blade (fine-grit, low conc.)	**WB-0050LC**	each	375.00
5-inch Diamond Wafering Blade (medium-grit, low conc.)	**WB-0055LC**	each	375.00
5-inch Diamond Wafering Blade (medium-grit, high conc.)	**WB-0055HC**	each	375.00
5-inch CBN Wafering Blade (medium-grit, high conc.)	**WCBN-0055**	each	375.00
5 x 0.024 x 0.5-inch Electroplated 120-grit Diamond Blade	**WB-050EPD**	each	205.00

6-inch (153 mm) Diamond Blades (1/2-inch arbor, 0.020-inch thick)

PACE Product Name	Catalog Number	Qty	Price ($)
6-inch Diamond Wafering Blade (fine-grit, low conc.)	**WB-0060LC**	each	465.00
6-inch Diamond Wafering Blade (medium-grit, low conc.)	**WB-0065LC**	each	465.00
6-inch Diamond Wafering Blade (medium-grit, high conc.)	**WB-0065HC**	each	465.00
6-inch CBN Wafering Blade (medium-grit, high conc.)	**WCBN-0065**	each	465.00
6 x 0.032 x 0.5-inch Electroplated 120-grit Diamond Blade	**WB-060EPD**	each	225.00

7-inch (175 mm) Diamond Blades (1/2-inch arbor, 0.020-inch thick)

PACE Product Name	Catalog Number	Qty	Price ($)
7-inch Diamond Wafering Blade (fine-grit, low conc.)	**WB-0070LC**	each	605.00
7-inch Diamond Wafering Blade (medium-grit, low conc.)	**WB-0075LC**	each	605.00
7-inch Diamond Wafering Blade (medium-grit, high conc.)	**WB-0075HC**	each	605.00
7-inch CBN Wafering Blade (medium-grit, high conc.)	**WCBN-0075**	each	605.00
7 x 0.039 x 0.5-inch Electroplated 120-grit Diamond Blade	**WB-070EPD**	each	250.00

8-inch (204 mm) Diamond Blades (1/2-inch arbor, 0.024-inch thick)

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch Diamond Wafering Blade (fine-grit, low conc.)	**WB-0080LC**	each	620.00
8-inch Diamond Wafering Blade (medium-grit, low conc.)	**WB-0085LC**	each	620.00
8-inch Diamond Wafering Blade (medium-grit, high conc.)	**WB-0085HC**	each	620.00
8-inch CBN Wafering Blade (medium-grit, high conc.)	**WCBN-0085**	each	620.00
8 x 0.039 x 0.5-inch Electroplated 120-grit Diamond Blade	**WB-080EPD**	each	310.00

Precision Abrasive Blades (1/2-inch arbor)

PACE Product Name	Catalog Number	Qty	Price ($)
5 x 0.040-inch SiC Abrasive Blade (non-ferrous metals)	**MAX-C125**	10	155.00
6 x 0.038-inch SiC Abrasive Blade (non-ferrous metals)	**MAX-C150**	10	155.00
6 x 0.062-inch Alumina Abrasive Blade (ferrous metals)	**MAX-D150**	10	155.00
7 x 0.028-inch Abrasive Blade (general purpose)	**MAX-7000S**	10	205.00

Wafer Cutting Accessories

PACE Product Name	Catalog Number	Qty	Price ($)
DIACUT™ Dressing Stick (1/2 x 1/2 x 4-1/2-inch)	**DRES-0010**	each	14.50
DIACUT™ Oil-based Cutting Fluid (16 oz)	**OL-3000-16**	16 oz	12.50
DIACUT™ Oil-based Cutting Fluid (32 oz)	**OL-3000-32**	32 oz	22.50
DIACUT™ Water-based Cutting Fluid (16 oz)	**WL-3000-16**	16 oz	12.50
DIACUT™ Water-based Cutting Fluid (32 oz)	**WL-3000-32**	32 oz	22.50
DIACUT™ 2 Water-based Anti-corrosion Cutting Fluid (16 oz)	**WL2-3000-16**	16 oz	12.50
DIACUT™ 2 Water-based Anti-corrosion Cutting Fluid (32 oz)	**WL2-3000-32**	32 oz	22.50
Propylene Glycol-based Anti-Corrosion Additive (32 oz)	**PCC-5000-32**	32 oz	28.00

Economical Stainless Steel Diamond Wafering Blades (Best Value)

Diamond / CBN Wafering Blades with Corrosion Resistant Stainless Steel Core (1/2-inch arbor) - General Purpose Blade

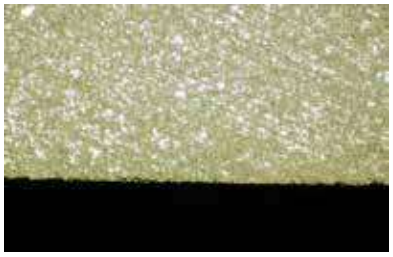
PACE Product Name	Catalog Number	Qty	Price ($)
4-inch stainless steel general purpose diamond/CBN Wafering Blade	**WB-004GP**	each	205.00
5-inch stainless steel general purpose diamond/CBN Wafering Blade	**WB-005GP**	each	235.00
6-inch stainless steel general purpose diamond/CBN Wafering Blade	**WB-006GP**	each	310.00
7-inch stainless steel general purpose diamond/CBN Wafering Blade	**WB-007GP**	each	375.00
8-inch stainless steel general purpose diamond/CBN Wafering Blade	**WB-008GP**	each	435.00

Diamond Wafering Blades (low concentration) with Corrosion Resistant Stainless Steel Core (1/2-inch arbor)

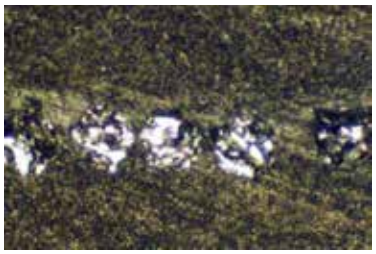
PACE Product Name	Catalog Number	Qty	Price ($)
4-inch stainless steel low concentration diamond Wafering Blade	**WB-004LCS**	each	205.00
5-inch stainless steel low concentration diamond Wafering Blade	**WB-005LCS**	each	235.00
6-inch stainless steel low concentration diamond Wafering Blade	**WB-006LCS**	each	310.00
7-inch stainless steel low concentration diamond Wafering Blade	**WB-007LCS**	each	375.00
8-inch stainless steel low concentration diamond Wafering Blade	**WB-008LCS**	each	435.00

MATERIAL	CHARACTERISTIC	SPEED (RPM)	LOAD	BLADE (grit/conc)
Silicon substrates	Soft/Brittle	<300	Low	Fine/Low
Gallium arsenide	Soft/Brittle	<200	Low	Fine/Low
Boron composites	Hard/Brittle	500	Medium	Fine/Low
Ceramic fiber composites	Hard/Brittle	1000	Medium	Fine/Low
Glass	Brittle	1000	Medium	Fine/Low
Minerals	Friable/Brittle	Maximum	High	Fine/Low
Alumina ceramic	Hard/Tough	Maximum	High	Medium/Low
Zirconia (PSZ)	Hard/Tough	Maximum	High	Medium/Low
Silicon nitride	Hard/Tough	Maximum	High	Medium/Low
Metal matrix composites	Hard/Tough	Maximum	High	Medium/High
General Purpose		Variable	Variable	Medium/High

Boron-graphite composite sectioned with fine grit diamond wafering blade. Boron fibers damage minimal



Silicon edge intact after sectioning with fine grit diamond wafering blade



Boron-graphite composite sectioned with medium grit diamond wafering blade. Boron fibers damaged

Silicon edge damaged after sectioning with medium grit diamond wafering blade

TIP: Precision Wafering

1. Properly fixture or clamp the sample/specimen
2. Select the proper wafering blade and cutting fluid
3. Set the blade speed and load
4. For samples with coatings orient the sample so the coating is cut in compression
5. Dress or condition the blade periodically when the cutting rate diminishes

Diamond Wafering Blades (high concentration) with Corrosion Resistant Stainless Steel Core (1/2-inch arbor)

PACE Product Name	Catalog Number	Qty	Price ($)
4-inch stainless steel high concentration diamond Wafering Blade	**WB-004HCS**	each	205.00
5-inch stainless steel high concentration diamond Wafering Blade	**WB-005HCS**	each	235.00
6-inch stainless steel high concentration diamond Wafering Blade	**WB-006HCS**	each	310.00
7-inch stainless steel high concentration diamond Wafering Blade	**WB-007HCS**	each	375.00
8-inch stainless steel high concentration diamond Wafering Blade	**WB-008HCS**	each	435.00

Improved Precision Wafering Blades:

- Stainless steel core for improved corrosion resistance
- Economical Option
- High Quality Blade
- Available with a general purpose diamond / CBN hybrid abrasive and with the traditional low and high medium grit diamond concentration

TERAPRESS TP-7100S

TERAPRESS TP-7100S

Pneumatic Compression Mounting Press

- Pneumatic (air pressure) press
- Automatic
- Programmable
- 1000 & 2000 Watt heaters
- Water cooling (temperature, time and manual)
- Non-Interchangeable molds or Interchangeable mold cylinder (optional)
- Mold sizes (1, 1.25, 1.5 and 2-inch / 25, 30 and 40 mm)
- High resolution display
- Highly reproducible
- Robust and durable design
- Economical

TERAPRESS TP-7500S

TERAPRESS TP-7500S

Hydraulic Compression Mounting Press

- Hydraulic force
- Automatic
- Programmable
- 1000 & 2000 Watt heaters
- Water cooling (temperature, time and manual)
- Non-Interchangeable molds or Interchangeable mold cylinder (optional)
- Mold sizes (1, 1.25, 1.5 and 2-inch / 25, 30 and 40 mm)
- High resolution display
- Highly reproducible mounts
- Robust and durable design
- Economical

COMPRESSION MOUNTING PRESSES

Pneumatic Metallographic Compression Mounting Press

2 year warranty
Limited Warranty

FEATURE	TERAPRESS TP-7100S DESCRIPTION
Control	Touch screen
Mount sizes	1, 1.25, 1.5 and 2-inch (25, 30 and 40 mm)
Mold Cylinders	Single
Force	Pneumatic force
Incoming Pressure	Max. 95 psi
Heater Specification	1000 Watts (110V 15 amp) 2000 Watts (220V 10 amp)
Maximum Temperature	392°F (200°C)
Cooling System	Water with manual, temperature or time control
Dimensions (WxDxH)	21 x 19 x 19-inches (534 x 485 x 485 mm)
Weight	69 lbs (32 kg)
TP-TANK	Recirculating / Cooling Tank (14 gallon) with pump (optional)
Catalog Number	TP-7100S-110V & TP-7100S-220V

Benefits:

- Fast cycle times
- 7-inch touchscreen interface
- Pre-loaded parameters for PACE Products
- Soft Start capabilities
- Interchangeable or fixed size molds
- Custom procedures list
- Heating graph for monitoring temperature and cycle progress

REQUEST A QUOTE
www.metallographic.com

Hydraulic Metallographic Compression Mounting Press

FEATURE	TERAPRESS TP-7500S DESCRIPTION
Control	Touch screen
Mount sizes	1, 1.25, 1.5 and 2-inch (25, 30 and 40 mm)
Mold Cylinders	Single
Force	Hydraulic force
Maximum Force	32 MPa (4500 psi)
Heater Specification	1000 Watts (110V 15 amp) 2000 Watts (220V 10 amp)
Maximum Temperature	392°F (200°C)
Cooling System	Water with manual, temperature or time control
Dimensions (WxDxH)	21 x 19 x 19-inches (534 x 485 x 485 mm)
Weight	108 lbs (50 kg)
TP-TANK	Recirculating / Cooling Tank (14 gallon) with pump (optional)
Catalog Number	TP-7500S-110V & TP-7500S-220V

Benefits:

- Fast cycle times (<10 minutes)
- Up to 32 MPa pressure at the mount
- Interchangeable or fixed size molds
- Soft start capabilities
- Quiet operation
- 7-inch Touch screen controls
- Pre-loaded parameters
- Custom procedures list
- Heating graph for monitoring temperature and cycle progress
- No need for compressed air

CE Machinery Directive 2006/42/EC

TERAPRESS Mold Assemblies

1-inch Mold Assembly

1.0-inch interchangeable mold assembly contains mold sleeve, lower/upper ram (spacer optional)
Catalog no. TP75-0100

1.25-inch Mold Assembly

1.25-inch interchangeable mold assembly contains mold sleeve, lower/upper ram (spacer optional)
Catalog no. TP75-0125

1.5-inch Mold Assembly

1.5-inch interchangeable mold assembly contains mold sleeve, lower/upper ram (spacer optional)
Catalog no. TP75-0150

Interchangeable Molds:

- Allows for easy changing of mold size. Simply replace mold, sleeve and rams
- Available in 1, 1.25 and 1.5-inch as well as 25, 30 and 40 mm molds

25 mm Mold Assembly

25 mm interchangeable mold assembly contains sleeve, lower/upper ram (spacer optional)
Catalog no. TP75-25

30 mm Mold Assembly

30 mm interchangeable mold assembly contains sleeve, lower/upper ram (spacer optional)
Catalog no. TP75-30

40 mm Mold Assembly

40 mm interchangeable mold assembly contains sleeve, lower/upper ram (spacer optional)
Catalog no. TP75-40

Fixed Block Molds:

- The heater/cooler is manufactured to match the size of the mold (does not require a mold sleeve)
- Reduces cooling times for producing faster mounts
- Available in 1, 1.25, 1.5 and 2-inch as well as 25, 30, 40 and 50 mm sizes

Mold Assemblies for Interchangeable Mold Heater

TERAPRESS Molds	Flat Ram Catalog no.	Chamfered Ram Catalog no.
1-inch diameter mold assembly	TP75-0100	TP75-0100C
1.25-inch diameter mold assembly	TP75-0125	TP75-0125C
1.5-inch diameter mold assembly	TP75-0150	TP75-0150C
25 mm diameter mold assembly	TP75-25	TP75-25C
30 mm diameter mold assembly	TP75-30	TP75-30C
40 mm diameter mold assembly	TP75-40	TP75-40C

Mold Spacers

TERAPRESS Spacers	Flat Ram Catalog no.	Chamfered Ram Catalog no.
1-inch diameter spacer	TPS-0100	TPS-0100C
1.25-inch diameter spacer	TPS-0125	TPS-0125C
1.5-inch diameter spacer	TPS-0150	TPS-0150C
2-inch diameter spacer	TPS-0200	TPS-0200C
25 mm diameter spacer	TPS-25	TPS-25C
30 mm diameter spacer	TPS-30	TPS-30C
40 mm diameter spacer	TPS-40	TPS-40C
50 mm diameter spacer	TPS-50	TPS-50C

TERAPRESS Heating/Cooling Blocks

1.0-inch Fixed Sized Heater / Mold Assembly

1.0-inch Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-0100H

1.25-inch Fixed Sized Heater / Mold Assembly

1.25-inch Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-0125H

1.5-inch Fixed Sized Heater / Mold Assembly

1.5-inch Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-0150H

2.0-inch Fixed Sized Heater / Mold Assembly

2.0-inch Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-0200H

25 mm Fixed Sized Heater / Mold Assembly

25 mm Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-25H

30 mm Fixed Sized Heater / Mold Assembly

30 mm Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-30H

40 mm Fixed Sized Heater / Mold Assembly

40 mm Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-40H

50 mm Fixed Sized Heater / Mold Assembly

50 mm Heating / Cooling block with lower & upper rams (spacer optional)
Catalog no. TP75-50H

Mold Assemblies for Interchangeable Mold Heater

TERAPRESS Fixed sized Heater / Molds	Flat Ram Catalog no.	Chamfered Ram Catalog no.
1-inch diameter fixed heater / cooler assembly	TP75-0100H	TP75-0100HC
1.25-inch diameter fixed heater / cooler assembly	TP75-0125H	TP75-0125HC
1.5-inch diameter fixed heater / cooler assembly	TP75-0150H	TP75-0150HC
2-inch diameter fixed heater / cooler assembly	TP75-0200H	TP75-0200HC
25 mm diameter fixed heater / cooler assembly	TP75-25H	TP75-25HC
30 mm diameter fixed heater / cooler assembly	TP75-30H	TP75-30HC
40 mm diameter fixed heater / cooler assembly	TP75-40H	TP75-40HC
50 mm diameter fixed heater / cooler assembly	TP75-50H	TP75-50HC

Recirculating / Cooling Tank

Recirculating / Cooling tank for TERAPRESS-S Metallographic Compression Mounting Presses
Catalog no. TP-TANK

COMPRESSION MOUNTING CONSUMABLES

	PHENOLICS	ACRYLIC	EPOXY (glass-filled)	DIALLYL PHTHALATE
Type	Thermoset	Thermoplastic	Thermoset	Thermoset
Cost	Low	Moderate	Moderate	Moderate
Ease of Use	Excellent	Moderate	Good	Good
Color	Black, red, green	Clear	Gray	Blue
Cycle Time (1.25-inch mount) TERAPRESS TP-7500S (minimum)	4-5 minutes	8-10 minutes	5-7 minutes	5-7 minutes
Edge Retention	Fair	Good	Excellent	Excellent
Clarity	None	Excellent	None	None
Hardness	Low	Medium	High	High

	PHENOLICS	ACRYLIC	EPOXY (glass-filled)	DIALLYL PHTHALATE
Shore-D hardness	82	80	88	88
Shrinkage (in/in)	0.006	0.001-0.003	0.001-0.003	0.001-0.003
Chemical resistance	Glycol, petrochemicals, solvents, acids	Alcohol, dilute acids, solvents	Solvents, acids, alkalies & oxidizers	Solvents, acid and alkalies

Phenolic Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
Black Phenolic powder (5 lbs)	**CM-2001B-5**	5 lbs	28.00
Black Phenolic powder (25 lbs)	**CM-2001B-25**	25 lbs	125.00
Red Phenolic powder (5 lbs)	**CM-2001R-5**	5 lbs	30.00
Red Phenolic powder (25 lbs)	**CM-2001R-25**	25 lbs	135.00
Green Phenolic powder (5 lbs)	**CM-2001G-5**	5 lbs	30.00
Green Phenolic powder (25 lbs)	**CM-2001G-25**	25 lbs	135.00

TIP: Phenolic Colors

Use different phenolic colors to code jobs, specimen types or for different test dates. For example, changing the phenolic color each month will show which samples or jobs are getting old

If the color dye in the mount bleeds out when rinsing with alcohol, this is an indication that the mount was not fully cured either at a high enough temperature or for the proper length of time

Phenolic PREMIUM Compression Mounting with Mold Release Agent

PREMIUM Phenolic Powders

PACE Product Name	Catalog Number	Qty	Price ($)
Black PREMIUM Phenolic powder (2.5 kg)	**CM-2500B-2**	2.5 kg	38.00
Black PREMIUM Phenolic powder (7.5 kg)	**CM-2500B-8**	7.5 kg	155.00
Red PREMIUM Phenolic powder (2.5 kg)	**CM-2500R-5**	2.5 kg	45.00
Red PREMIUM Phenolic powder (7.5 kg)	**CM-2500R-8**	7.5 kg	165.00
Green PREMIUM Phenolic powder (2.5 kg)	**CM-2500G-5**	2.5 kg	45.00
Green PREMIUM Phenolic powder (7.5 kg)	**CM-2500G-8**	7.5 kg	165.00

COMPRESSION MOUNTING CONSUMABLES

Acrylic Clear Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
TRANSACRYLIC clear compression mounting powder (5 lbs)	**CM-2101A-5**	5 lbs	115.00
TRANSACRYLIC clear compression mounting powder (25 lbs)	**CM-2101A-25**	25 lbs	505.00

TIP: Acrylic Mounts

A common problem with acrylic mounts, known as the "cotton ball" effect, can occur with thermoplastic acrylic resins. The cause is due to the following:

Heating the compression mounting resin too fast causes a liquid layer to form around the non-melted powder. This creates trapped air that cannot escape. It is recommended that the mounting press use a soft start temperature of 120°C to bring the mounting press and acrylic compression mounting powder into a preheated equilibrium and then raise the temperature to the final curing temperature (140-150°C) for a few minutes to allow the acrylic to flow into the specimen features.

Acrylic PREMIUM Clear Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
TRANSACRYLIC clear compression mounting powder (1 kg)	**CM-2101A-1**	1 kg	52.50
TRANSACRYLIC clear compression mounting powder (2.5 kg)	**CM-2101A-2**	2.5 kg	125.00
TRANSACRYLIC clear compression mounting powder (7.5 kg)	**CM-2101A-8**	7.5 kg	365.00

Diallyl Phthalate Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
Diallyl Phthalate blue compression mounting powder (5 lbs)	**DY-2301A-5**	5 lbs	155.00
Diallyl Phthalate blue compression mounting powder (25 lbs)	**DY-2301A-25**	25 lbs	605.00

Glass Filled Epoxy Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
EPOCOMP Epoxy Resin powder (5 lbs)	**EP-2201A-5**	5 lbs	145.00
EPOCOMP Epoxy Resin powder (25 lbs)	**EP-2201A-25**	25 lbs	580.00
EPOCOMP Fine Epoxy Resin powder (5 lbs)	**EPF-2201-5**	5 lbs	155.00
EPOCOMP Fine Epoxy Resin powder (25 lbs)	**EPF-2201-25**	25 lbs	610.00

TIP: Glass Filled Mounts

- Glass filled epoxies and diallyl phthalates are excellent mounting compounds for protecting the specimen edges during grinding and polishing
- Glass filled resins can be expensive, so to reduce the cost per mount, it is recommended that the epoxy or diallyl phthalate be used at the specimen interface and then layered with a lower cost mounting compound such as a phenolic. A common combination is red phenolic / glass filled epoxy.

PREMIUM Glass Filled Epoxy-Phenolic Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
PREMIUM Glass Filled Epoxy-Phenolic edge retention compression mounting resin (2.5 kg)	**EPF-2500-2**	2.5 kg	195.00
PREMIUM Glass Filled Epoxy-Phenolic edge retention compression mounting resin (8 kg)	**EPF-2500-8**	7.5 kg	725.00

COMPRESSION MOUNTING CONSUMABLES

Conductive Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
Conductive (graphite) powder (1 lb)	**CONDUCTO-1P**	1 lb	40.50
Conductive (graphite) powder (5 lbs)	**CONDUCTO-5P**	5 lbs	195.00
Conductive (graphite) powder (25 lbs)	**CONDUCTO-25P**	25 lbs	760.00
Conductive (copper) powder (1 lb)	**CONDUCTO-CU-1**	1 lb	72.00
Conductive (copper) powder (5 lbs)	**CONDUCTO-CU-5**	5 lbs	295.00
Conductive (copper) powder (25 lbs)	**CONDUCTO-CU-25**	25 lbs	1350.00

TIP: Conductive Mounts

- Conductive mounts are used to provide conductivity to the mount for use with electron microscopy
- Conductive mounts use either graphite powder or copper as the conductive filler

Conductive Premium Compression Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
Conductive Premium (graphite) powder (1 kg)	**CONDUCTO-G1000**	1 kg	105.00
Conductive Premium (graphite) powder (2.5 kg)	**CONDUCTO-G2500**	2.5 kg	210.00
Conductive Premium (graphite) powder (7.5 kg)	**CONDUCTO-G7500**	7.5 kg	575.00
Conductive Premium (copper) powder (1 kg)	**CONDUCTO-CU1000**	1 kg	135.00
Conductive Premium (copper) powder (2.5 kg)	**CONDUCTO-CU2500**	2.5 kg	295.00
Conductive Premium (copper) powder (7.5 kg)	**CONDUCTO-CU7500**	7.5 kg	815.00

Miscellaneous Compression Mounting Accessories

MR-1000

GLOVES

MKLIP

MULTIKLIP

SKLIP

UNIKLIP

KLIP

MS-1000-30

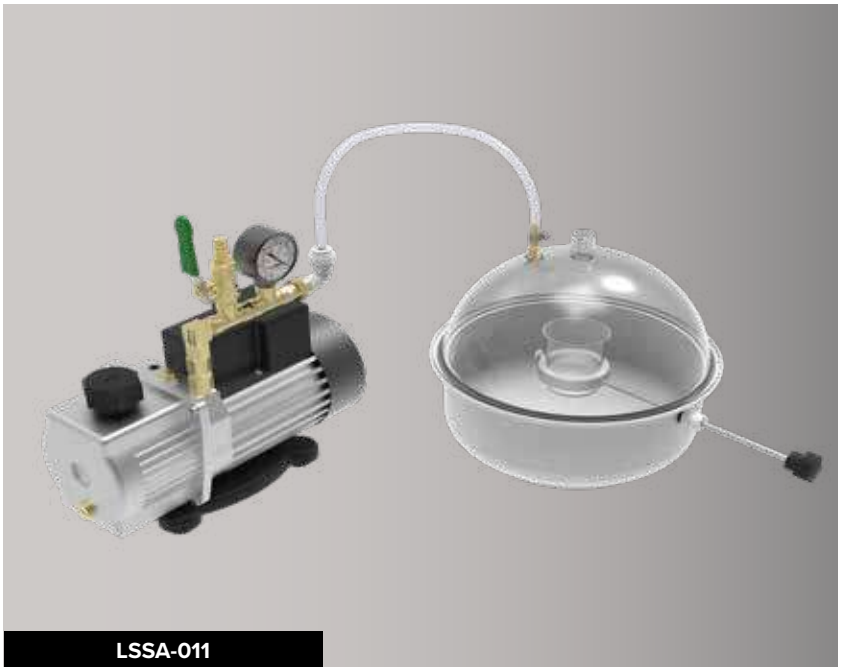
SCRIBE

Disposable Gloves

PACE Product Name	Catalog Number	Qty	Price ($)
Mold release (8 oz)	**MR-1000-08**	8 oz	19.50
Mold release (16 oz)	**MR-1000-16**	16 oz	29.50
Mold release (1 gallon)	**MR-1000-128**	1 gallon	135.00
Utility heat protective gloves (pair)	**GLOVES**	pair	12.50
Small disposable protective gloves (100/box)	**GLOVES-S100**	100/box	25.00
Medium disposable protective gloves (100/box)	**GLOVES-M100**	100/box	25.00
Large disposable protective gloves (100/box)	**GLOVES-L100**	100/box	25.00
Metal MKLIP specimen clips (100/pkg)	**MKLIP-0100**	100/pkg	70.50
Plastic SKLIP spring specimen clips (100/pkg)	**SKLIP-0100**	100/pkg	39.00
Plastic SKLIP spring specimen clips (1000/pkg)	**SKLIP-1000**	1000/pkg	305.00
Plastic KLIP specimen clips (100/pkg)	**KLIP-0100**	100/pkg	42.00
Plastic MULTICLIP specimen clips (100/pkg)	**MULTICLIP-0100**	100/pkg	55.50
Plastic UNIKLIP specimen clips (100/pkg)	**UNIKLIP-0100**	100/pkg	35.00
30 ml measuring scoop	**MS-1000-30**	each	3.00
Scribing tool	**SCRIBE**	each	35.00

Compression Mounting Recommended Procedures:

- Clean specimens to remove cutting and handling residue
- Remove debris from mold assembly
- Apply thin coat of mold release compound to mold assembly
- Raise mold ram to up position
- Center specimen on ram
- Lower ram assembly
- Pour predetermined amount of resin into mold
- Lock mold assembly cover
- Slowly raise ram into up position
- Apply recommended heat and maintain force for specified period of time
- Cool to near room temperature
- Remove mounted specimen
- Clean mold and ram assembly



LSSA-011

VACUUM CHAMBER
LSSA-011

Castable Vacuum Mounting Press

- Pour under vacuum
- Tilting, retractable pouring arm
- Cure at room pressure
- Easy to Use
- Robust and durable design
- Economical

	ACRYLICS	EPOXY	POLYESTER
Type	Acrylic resin and hardener	Epoxy resin and hardener	Polyester resin and hardener
Peak Temperature	150°F (65°C)	100°F-375°F (38-190°C)	100°F (38°C)
Shore-D Hardness	80 (90+ for SUPERMOUNT)	82	76
Cure Time	8-15 minutes	30 minutes for 8 hours	6-8 hours
Comments	Some shrinkage	Moderate hardness, low shrinkage, transparent	Transparent and clear

CASTABLE RESINS	RESIN MIXTURE	PROPERTIES
CASTAMOUNT Acrylic	3-parts powder and 2-parts liquid	Translucent, fast cure
PREMIUM Acrylic	3-parts powder and 2-parts liquid	Translucent, fast cure
ACRYLIC PLUS Acrylic	2-parts powder and 1-part liquid	Semi-clear, fast cure, lower cost
SUPERMOUNT Acrylic	3-parts powder and 2-parts liquid	Grayish/Black, hard, low shrinkage, fast cure
Epoxy - standard **Epoxy PLUS**	5:1 resin:hardener (wt.) 11:2 resin:hardener (wt.)	Clear to translucent, low shrinkage, 4-8 hour cure
Quick Mount Epoxy	Epoxy (2-liquids) 10:1 resin:hardener (wt.)	Translucent, slightly yellow, 30 minute - 2 hour cure
ULTRATHIN 2 Epoxy **ULTRATHIN 2 Epoxy PLUS**	10:1 resin:hardener (wt.) 18:5 resin:hardener (wt.)	Clear, low viscosity for porous specimens, 2-6 hour cure
POLYCAST Polyester	Polyester (2-liquids)	Clear and relatively inexpensive

CASTABLE MOUNTING CHAMBER

Castable Metallographic Vacuum Mounting Chamber

2 year warranty
Limited Warranty

FEATURE	LSSA-011 DESCRIPTION
Bell jar	Tilting, retractable pouring arm
Mount sizes	1, 1.25, 1.5 and 2-inch -- 25, 30, 40 and 50 mm
Vacuum	Vacuum pump (sold separately)
Dimensions (WxDxH)	12 x 12 x 12-inch (300 x 300 x 300 mm)
Weight	2.2 lbs (1 kg)
Catalog Number	LSSA-011

Benefits:

- Able to pull vacuum and pour under vacuum
- Pour multiple samples
- High visibility chamber
- Easy to Use
- Robust and Durable

DESCRIPTION	110V VACUUM PUMP	220V VACUUM PUMP
Flow Rate	2 CFM (48 liters / minutes)	2 CFM (48 liters / minutes)
Ultimate Vacuum	50 micron	50 micron
Power	0.25 hp	0.25 hp
Inlet Port	1/4" SAE and 1/2" ACME ports	1/4" SAE and 1/2" ACME ports
Dimensions (WxDxH)	5 x 12.2 x 9.6-inch (127 cm x 310 cm x 245 cm)	5 x 12.2 x 9.6-inch (127 cm x 310 cm x 245 cm)
Weight	13.7 lbs (6.2 kg)	13.7 lbs (6.2 kg)
Catalog Number	VAC-110	VAC-220

Castable Mounting:

Castable resins are monomer resins which utilize a catalyst or hardener for polymerization. Polymerization results in cross-linking of the polymer to form a relatively hard mount. Castable resins also have the advantage of simultaneously mounting multiple samples at one time for increased throughput. A number of resin systems are used for metallographic mounting, these include:

- Epoxy (2-part) liquid resins
- Acrylic (castable) resin powders with a liquid hardener
- Polyester (clear and can be used for large castings) 2-part liquid resin/hardener

CE Machinery Directive 2006/42/EC

ACRYLIC MOUNTING CONSUMABLES

Acrylic Castable Mounting:

Castable acrylics are easy to use and are very robust. The main advantage of mounting with castable acrylics is the fast curing time. Depending upon the mixing ratio, castable acrylic mounts are typically ready to use within 8-15 minutes. Also unlike epoxy resins, the ratio of the various acrylic parts (powder to liquid) can be altered up to 25% with no adverse effects to the final properties of the mount. This is because both the liquid and powder are acrylics containing various additives and curing agents. By varying the ratio of the liquid to powder, the curing time and viscosity can be altered.

PACE Product Name	Catalog Number	Qty	Price ($)
CASTAMOUNT Acrylic kit (1 lb resin with 12 oz liquid hardener)	**AK-5000-K1**	1 lb	65.00
CASTAMOUNT Acrylic kit (5 lbs resin with 1/2 gallon liquid hardener)	**AK-5000-K5**	5 lbs	270.00
CASTAMOUNT Acrylic Powders			
CASTAMOUNT Acrylic powder (1 lb)	**AR-5000-P1**	1 lb	55.00
CASTAMOUNT Acrylic powder (5 lbs)	**AR-5000-P5**	5 lbs	240.00
CASTAMOUNT Acrylic powder (25 lbs)	**AR-5000-P25**	25 lbs	1075.00
CASTAMOUNT Acrylic powder (100 lbs)	**AR-5000-P100**	100 lbs	4050.00
CASTAMOUNT Acrylic Liquids			
CASTAMOUNT Acrylic hardener (12 oz)	**AH-5000-H12**	12 oz	28.50
CASTAMOUNT Acrylic hardener (32 oz)	**AH-5000-H32**	32 oz	48.50
CASTAMOUNT Acrylic hardener (1/2 gallon)	**AH-5000-H64**	1/2 gallon	72.50
CASTAMOUNT Acrylic hardener (1 gallon)	**AH-5000-H128**	1 gallon	115.00
CASTAMOUNT Acrylic hardener (5 gallon)	**AH-5000-H640**	5 gallon	505.00

TIP: Acrylics
Acrylics can be submerged into a water bath during curing. This reduces the exotherm heat and thus reduces the shrinkage of the mount at the specimen interface. A secondary advantage is that the water also absorbs the odor.

PREMIUM Acrylics (Castable Mounting)

PACE Product Name	Catalog Number	Qty	Price ($)
PREMIUM Acrylic kit (1 kg resin with 500 ml liquid hardener)	**PAR-5000-K1**	1 kg	195.00
PREMIUM Acrylic kit (2.5 kg resin with 2 liter liquid hardener)	**PAR-5000-K2**	2.5 kg	405.00
PREMIUM Acrylic Powders			
PREMIUM Acrylic powder (1 kg)	**PAR-5000-P1000**	1 kg	170.00
PREMIUM Acrylic powder (2.5 kg)	**PAR-5000-P2500**	2.5 kg	370.00
PREMIUM Acrylic powder (7.5 kg)	**PAR-5000-P7500**	7.5 kg	945.00
PREMIUM Acrylic Liquids			
PREMIUM Acrylic hardener (500 ml)	**PAH-5000-H500**	500 ml	74.00
PREMIUM Acrylic hardener (1 liter)	**PAH-5000-H1L**	1 liter	135.00
PREMIUM Acrylic hardener (5 liters)	**PAH-5000-H5L**	5 liter	525.00

ACRYLIC PLUS Acrylics (Castable Mounting)

PACE Product Name	Catalog Number	Qty	Price ($)
ACRYLIC PLUS Castable Mounting Resin Kit (1 lb resin with 12 oz liquid hardener)	**ACYP-5000-K1**	1 lb	62.00
ACRYLIC PLUS Castable Mounting Resin Kit (5 lbs resin with 1/2 gallon liquid hardener)	**ACYP-5000-K5**	5 lbs	245.00
ACRYLIC PLUS Acrylic Powders			
ACRYLIC PLUS Resin powder (1 lb)	**ACYP-5000-P1**	1 lb	55.00
ACRYLIC PLUS Resin powder (5 lbs)	**ACYP-5000-P5**	5 lbs	235.00
ACRYLIC PLUS Resin powder (25 lbs)	**ACYP-5000-P25**	25 lbs	1105.00
ACRYLIC PLUS Resin powder (100 lbs)	**ACYP-5000-P100**	100 lbs	2285.00
ACRYLIC PLUS Acrylic Liquids			
ACRYLIC PLUS Resin hardener (12 oz)	**ACYP-5000-H12**	12 oz	28.50
ACRYLIC PLUS Resin hardener (32 oz)	**ACYP-5000-H32**	32 oz	48.50
ACRYLIC PLUS Resin hardener (1/2 gallon)	**ACYP-5000-H64**	1/2 gallon	72.50
ACRYLIC PLUS Resin hardener (1 gallon)	**ACYP-5000-H128**	1 gallon	115.00
ACRYLIC PLUS Resin hardener (5 gallon)	**ACYP-5000-H640**	5 gallon	505.00

SUPERMOUNT Glass Filled Acrylics (Castable Mounting)

PACE Product Name	Catalog Number	Qty	Price ($)
SUPERMOUNT Glass Filled Acrylic Kit (gray) (1 lb resin with 12 oz liquid hardener)	**GKAK-5000-K1**	1 lb	72.50
SUPERMOUNT Glass Filled Acrylic Kit (gray) (5 lbs resin with 1/2 gallon liquid hardener)	**GKAK-5000-K5**	5 lbs	290.00
SUPERMOUNT PLUS Acrylic Powders			
SUPERMOUNT Resin powder (1 lb)	**GRAR-5000-P1**	1 lb	62.00
SUPERMOUNT Resin powder (5 lbs)	**GRAR-5000-P5**	5 lbs	265.00
SUPERMOUNT Resin powder (25 lbs)	**GRAR-5000-P25**	25 lbs	1225.00
SUPERMOUNT Resin powder (100 lbs)	**GRAR-5000-P100**	100 lbs	4095.00
SUPERMOUNT Acrylic Liquids			
SUPERMOUNT Resin hardener (12 oz)	**GRAH-5000-H12**	12 oz	28.50
SUPERMOUNT Resin hardener (32 oz)	**GRAH-5000-H32**	32 oz	48.50
SUPERMOUNT Resin hardener (1/2 gallon)	**GRAH-5000-H64**	1/2 gallon	72.50
SUPERMOUNT Resin hardener (1 gallon)	**GRAH-5000-H128**	1 gallon	115.00
SUPERMOUNT Resin hardener (5 gallon)	**GRAH-5000-H640**	5 gallon	505.00

EPOXY MOUNTING CONSUMABLES

Epoxy Castable Mounting:

The most common and best performing castable resins are epoxy based. Epoxy resins are typically two-part liquid systems consisting of a resin and hardener. Mixing ratios vary depending upon the volume of the mixture or the mount size. Larger mounts require a ratio of less hardener to resin. The advantages of mounting with epoxy resins include:

- Low shrinkage
- Relatively clear
- Relatively low exotherm
- Excellent adhesion
- Excellent chemical resistance
- Good hardness
- Relatively inexpensive

Epoxy Curing Characteristics:

- Epoxy curing times are dependent upon a number of variables including:
- Volume of mounting resin (larger mounts cure faster)
- Thermal mass of specimen (larger specimens absorb heat and therefore require longer curing times)
- Specimen material properties
- Initial resin temperature (higher resin temperatures cure faster)
- Ambient temperature (higher room temperatures cure faster)
- Relative humidity and shelf life (absorption of water degrades resin and shortens shelf life)
- Mounting mold (plastic and rubber molds absorb heat differently)

Epoxy Standard Cure (5:2 Resin: Hardener) Castable Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
Standard Epoxy Resin			
Epoxy castable resin (32 oz)	**EP-3000-32**	32 oz	44.50
Epoxy castable resin (1-gallon)	**EP-3000-128**	1 gallon	132.00
Epoxy castable resin (5-gallons)	**EP-3000-5G**	5 gallons	605.00
Standard Epoxy Hardeners			
Epoxy hardener (8 oz)	**EH-3000-08**	8 oz	27.50
Epoxy hardener (32 oz)	**EH-3000-32**	32 oz	55.00
Epoxy hardener (1 gallon)	**EH-3000-128**	1 gallon	235.00

Epoxy PLUS Standard Cure (11:2 Resin: Hardener) Castable Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
EPOXY PLUS Resin			
Epoxy castable resin (32 oz)	**EP-3000-32P**	32 oz	44.50
Epoxy castable resin (1-gallon)	**EP-3000-128P**	1 gallon	132.00
Epoxy castable resin (5-gallons)	**EP-3000-5GP**	5 gallons	605.00
EPOXY PLUS Hardeners			
Epoxy hardener (8 oz)	**EH-3000-08P**	8 oz	38.00
Epoxy hardener (32 oz)	**EH-3000-32P**	32 oz	112.00
Epoxy hardener (1 gallon)	**EH-3000-128P**	1 gallon	410.00

Fast Curing Quick Mounting Epoxy (10:1 Resin: Hardener) Castable Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
Quick Mounting Epoxy Resins			
Quick Mounting fast epoxy castable resin (32 oz)	**ERF-3000-32**	32 oz	63.00
Quick Mounting fast epoxy castable resin (1-gallon)	**ERF-3000-128**	1 gallon	178.50
Quick Mounting fast epoxy castable resin (5-gallons)	**ERF-3000-5G**	5 gallons	795.00
Quick Mounting Epoxy Hardeners			
Quick Mounting fast epoxy hardener (8 oz)	**EHF-3000-08**	8 oz	42.00
Quick Mounting fast epoxy hardener (32 oz)	**EHF-3000-32**	32 oz	128.00
Quick Mounting fast epoxy hardener (1 gallon)	**EHF-3000-128**	1 gallon	450.00

Low Viscosity ULTRATHIN 2 Epoxy (10:1 Resin: Hardener) Castable Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
ULTRATHIN 2 Low Viscosity Epoxy Resins			
Low Viscosity castable epoxy resin (32 oz)	**ULTRA-3000R-32**	32 oz	78.00
Low Viscosity castable epoxy resin (1-gallon)	**ULTRA-3000R-128**	1 gallon	190.00
Low Viscosity castable epoxy resin (5-gallons)	**ULTRA-3000R-5G**	5 gallons	945.00
ULTRATHIN 2 Low Viscosity Epoxy Hardeners			
Low Viscosity castable epoxy hardener (8 oz)	**ULTRA-3000H-08**	8 oz	42.00
Low Viscosity castable epoxy hardener (32 oz)	**ULTRA-3000H-32**	32 oz	128.00
Low Viscosity castable epoxy hardener (1 gallon)	**ULTRA-3000H-128**	1 gallon	450.00

Low Viscosity ULTRATHIN 2 PLUS Epoxy (18:5 Resin: Hardener) Castable Mounting

PACE Product Name	Catalog Number	Qty	Price ($)
ULTRATHIN 2 PLUS Low Viscosity Epoxy Resins			
Low Viscosity castable epoxy resin (32 oz)	**ULTRA-3000R-32P**	32 oz	78.00
Low Viscosity castable epoxy resin (1-gallon)	**ULTRA-3000R-128P**	1 gallon	215.00
Low Viscosity castable epoxy resin (5-gallons)	**ULTRA-3000R-5GP**	5 gallons	945.00
ULTRATHIN 2 PLUS Low Viscosity Epoxy Hardeners			
Low Viscosity castable epoxy hardener (8 oz)	**ULTRA-3000H-08P**	8 oz	42.00
Low Viscosity castable epoxy hardener (32 oz)	**ULTRA-3000H-32P**	32 oz	128.00
Low Viscosity castable epoxy hardener (1 gallon)	**ULTRA-3000H-128P**	1 gallon	450.00

TIP: Epoxies

- Preheat resin and sample to 35°C (95°F) to expedite the initial heating process and for decreasing overall curing time

POLYESTER MOUNTING CONSUMABLES

Polyester Castable Mounting:

Polyesters are typically used when a very clear mount is required. Polyester resins are also useful for mounting parts for display. In this case, the part appears suspended in the plastic. The procedure for molding samples to be displayed is to first determine the mixing ratio of the resin to hardener (catalyst). This ratio is variable depending upon the mass of the casting. The table to the right for Polyester catalyst mixing ratio's is based on ambient and resin temperatures of 70°F

For larger volumes, the amount of hardener needs to be reduced significantly. The procedure for suspending the sample in the mount is to pour an initial layer and allow it to pot or gel (do not let it fully cure). The object or specimen is then placed on the "rubbery" polyester layer and another layer of the liquid polyester is poured. Multiple layers can be poured in this fashion if required.

Single Layer Casting (metallographic)		Multiple Layer Casting (display)	
Layer Thickness (inches)	Drops of catalyst per ounce of resin	Layer	Drops of catalyst per ounce of resin
1/8	15	1st layer	4-5
1/4	8	2nd layer	3-4
1/2	6	3rd layer	2-3
3/4	5	4th layer	1-2
1-1.5	4	5th layer or more	1

Polyester Characteristics:

- Very clear (water clear)
- High odor
- Best resin system for making large casting

Polyester Resin (Clear Castable Mounting)

PACE Product Name	Catalog Number	Qty	Price ($)
Clear Polyester castable resin (1 gallon)	**POLYCAST-128**	1 gallon	125.00
Polyester Hardener (2 oz)	**POLYHARD-02**	2 oz	11.00
Polyester Color Dye Set (3 colors)	**DYE-1000**	3 colors	40.50

TIP: Polyesters

Polyesters can be submerged into a water bath during curing. This reduces the exotherm heat and thus reduces the shrinkage of the mount at the specimen interface. A secondary advantage is that the water also absorbs the odor.

CASTABLE MOLDS & ACCESSORIES

Castable Mounting Molds

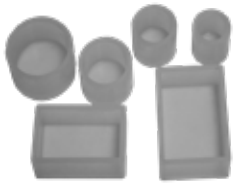
PACE Product Name	Catalog Number	Qty	Price ($)
Reusable Plastic Molds			
1.0-inch reusable two piece plastic mold (12/pkg)	**METPREP-0100**	12/pkg	31.00
1.25-inch reusable two piece plastic mold (12/pkg)	**METPREP-0125**	12/pkg	32.50
1.5-inch reusable two piece plastic mold (12/pkg)	**METPREP-0150**	12/pkg	42.50
2.0-inch reusable two piece plastic mold (12/pkg)	**METPREP-0200**	12/pkg	58.50
Disposable Plastic Molds			
1.0-inch disposable red mount cap - 50/pkg	**MOUNT-0100**	50/pkg	27.50
1.25-inch disposable red mount cap - 50/pkg	**MOUNT-0125**	50/pkg	28.50
1.5-inch disposable red mount cap - 50/pkg	**MOUNT-0150**	50/pkg	29.50

Reusable Plastic Molds

Disposable Plastic Molds

PACE Product Name	Catalog Number		Qty	Price ($)
Silicon Rubber Molds	**Blue Molds**	**Clear Molds**		
1.0-inch diameter Silicone Rubber Molds - 3/pkg	**RMOUNT-0100**	**RMOUNT-0100C**	3/pkg	31.00
1.25-inch diameter Silicone Rubber Molds - 3/pkg	**RMOUNT-0125**	**RMOUNT-0125C**	3/pkg	37.50
1.5-inch diameter Silicone Rubber Molds - 3/pkg	**RMOUNT-0150**	**RMOUNT-0150C**	3/pkg	48.50
2.0-inch diameter Silicone Rubber Molds - 3/pkg	**RMOUNT-0200**	**RMOUNT-0200C**	3/pkg	55.00
2.75 x 1-1/2 x 7/8-inch (70 x 39 x 22 mm) Silicone Rubber Molds	**RMOUNT-315R**	**RMOUNT-315C**	each	17.50
3 x 2 x 7/8-inch (76 x 51 x 22 mm) Silicone Rubber Molds	**RMOUNT-302R**	**RMOUNT-302C**	each	19.50

Silicon Rubber Molds - Blue



Silicon Rubber Molds - Clear

Castable Mounting Accessories

STORE-0125

MR-1000

MCUPS-0100

MKLIP

SKLIP

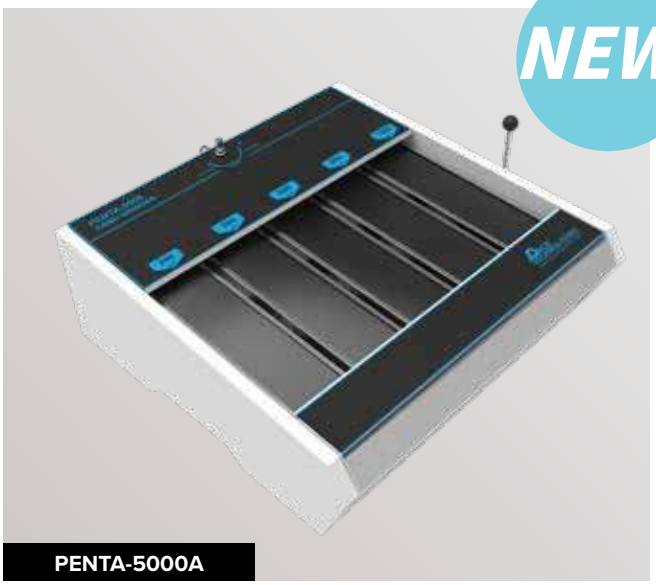
MULTIKLIP

UNIKLIP

KLIP

Disposable Gloves

PACE Product Name	Catalog Number	Qty	Price ($)
1-gallon castable pump dispenser	**ED-3000-01**	each	17.50
1.25-inch specimen storage container - 25/pkg	**STORE-0125**	25/pkg	42.00
Mold release (8 oz)	**MR-1000-08**	each	19.50
Mold release (16 oz)	**MR-1000-16**	each	29.50
Mixing Cups			
3 oz Graduated Paper Mixing cups (100/pkg)	**MCUPS-0100**	100/pkg	15.25
9 oz Plastic Mixing cups (50/pkg)	**PCUPS-050**	50/pkg	7.75
Vacuum Impregnator Pouring cups (50/pkg)	**POUR-CUP-050**	50/pkg	52.00
Mounting Klips			
Metal MKLIP Spring mounting clip (100/pkg)	**MKLIP-0100**	100/pkg	70.50
Plastic SKLIP Spring mounting clip (100/pkg)	**SKLIP-0100**	100/pkg	39.00
Plastic KLIP specimen mounting clip (100/pkg)	**KLIP-0100**	100/pkg	42.00
Plastic MULTICLIP specimen clips (100/pkg)	**MULTICLIP-0100**	100/pkg	55.50
Plastic UNIKLIP specimen clips (100/pkg)	**UNIKLIP-0100**	100/pkg	35.00
Disposable Gloves			
Small Nitrile Gloves (100/box)	**GLOVES-S100**	100/pkg	25.00
Medium Nitrile Gloves (100/box)	**GLOVES-M100**	100/pkg	25.00
Large Nitrile Gloves (100/box)	**GLOVES-L100**	100/pkg	25.00



PENTA-5000A

PENTA-5000A

Metallographic Hand Grinder

- 5-station hand grinder
- Wet or dry grinding
- Manual grinder
- Easy to change abrasive rolls
- Robust and durable design
- Easy to use
- User friendly
- Low cost
- Easy to service

PENTA-7500S

PENTA-7500S

Metallographic Belt Grinder

- 4-inch x 36-inch belts
- Wet or dry grinding
- Manual grinder
- Features planaring fixture
- Easy to change abrasive belts
- Robust and durable design
- Easy to use
- User friendly

PENTA-7500S Squaring and planarizing holder for metallographic mounts

1-inch Holder

Catalog no. P75S-SH-100

1.25-inch Holder

Catalog no. P75S-SH-125

1.5-inch Holder

Catalog no. P75S-SH-150

2-inch Holder

Catalog no. P75S-SH-200

25 mm Holder

Catalog no. P75S-SH-25

30 mm Holder

Catalog no. P75S-SH-30

40 mm Holder

Catalog no. P75S-SH-40

50 mm Holder

Catalog no. P75S-SH-50

METALLOGRAPHIC HAND GRINDERS

Manual Metallographic Hand Grinder

FEATURE	PENTA 5000A DESCRIPTION
Grinding stations	240, 360, 600, 800 and 1200 grit silicon carbide rolls
Roll sizes	3-7/16-inch width x 60 feet length with 1-inch core
Construction	• SMC molding and stainless steel • Hard coat anodized rollers and paper support plates
Cooling rinse system	Water
Dimensions (WxDxH)	21.5 x 24 x 9-inch (550 mm x 610 mm x 230 mm)
Weight	62 lbs (28 kg)
Catalog Number	PENTA-5000A

2 year warranty
Limited Warranty

Benefits:

- 5-grit grinding stations, including one for 800 (P2400) and 1200 (P4000) grit fine SiC abrasives
- Easy paper advance for maintaining sharp fresh abrasive
- Low maintenance
- Simple and easy to use
- Ideal for low and high volume labs

Planarizing Metallographic Belt Grinder

FEATURE	PENTA 7500S DESCRIPTION
Single belt	4 x 36-inch (102 x 914 mm)
Electrical Specification	110V / 220V 50/ 60 Hz
Motor power	550 W (0.75 hp)
Cooling / rinse system	Water
Construction	Heavy duty welded steel / fabricated metal
Dimensions (WxDxH)	20 x 24.75 x 14.75-inch (510 x 630 x 375 mm)
Weight	120 lbs (53 kg)
Catalog Number	PENTA-7500S

REQUEST A QUOTE
www.metallographic.com

Benefits:

- High torque motor (110V or 220V)
- Heat treated wear surface plate
- Quick belt changing mechanism
- Fine adjustment tracking control
- Specimen square holding device for maintaining or for squaring mounted specimens
- Rinse sink
- Emergency Stop button
- Water-tight ON/OFF switch

PENTA-7500S Accessories	Catalog Number
1-inch sleeve for square holder (each)	P75-SH-100
1.25-inch sleeve for square holder (each)	P75-SH-125
1.5-inch sleeve for square holder (each)	P75-SH-150
2-inch sleeve for square holder (each)	P75-SH-200
25 mm sleeve for square holder (each)	P75-SH-25
30 mm sleeve for square holder (each)	P75-SH-30
40 mm sleeve for square holder (each)	P75-SH-40
50 mm sleeve for square holder (each)	P75-SH-50

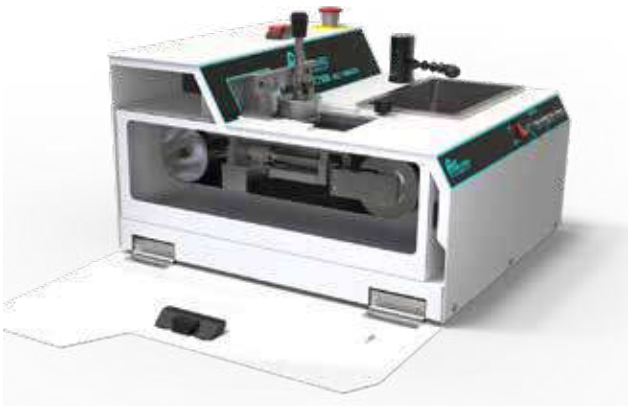
CE Machinery Directive 2006/42/EC

ABRASIVE BELTS, POWDERS & ROLLS

Specimen Planar Grinding:

In general, it is better to cut as close to the areas to be investigated than to grind with very coarse abrasives such as 60, 80 and 120 grit grinding papers; however, if the specimen requires coarse abrasive grinding it is HIGHLY recommended that a belt grinder with a planar grinding / squaring fixture be used. The squaring fixture is important so that mounted specimens remain both square and flat.

Note: It is nearly impossible to maintain a square sample by hand on a belt grinder. Square specimen mounts are very important for subsequent specimen preparation on automated single specimen preparation machines. PACE Technologies is the only metallographic equipment manufacturer that offers a planar grinding fixture for its PENTA 7500S belt grinder.



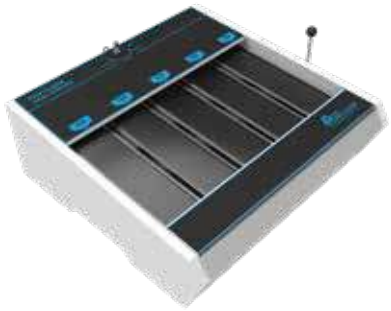
PENTA 7500S Metallographic Belt Grinder

Abrasive Belts (4-inch x 36-inch)

Zirconia (blue), Alumina (red) & Silicon Carbide (black) Abrasive Grinding Belts

PACE Product Name	Catalog Number	Qty	Price ($)
60 grit Zirconia Abrasive Belts	**ZRO2-B060**	5/pkg	80.00
120 grit Zirconia Abrasive Belts	**ZRO2-B120**	5/pkg	80.00
120 grit Alumina Abrasive Belts	**ALO-B120**	5/pkg	75.00
60 grit SiC Abrasive Belts	**SIC-B060**	10/pkg	125.00
80 grit SiC Abrasive Belts	**SIC-B080**	10/pkg	125.00
120 grit SiC Abrasive Belts	**SIC-B120**	10/pkg	125.00
180 grit SiC Abrasive Belts	**SIC-B180**	10/pkg	125.00
240 grit SiC Abrasive Belts	**SIC-B240**	10/pkg	125.00

ABRASIVE BELT TYPE	BENEFIT
Alumina	Hard and durable abrasive, not as sharp as SiC; however, alumina lasts longer than SiC
Silicon Carbide	Very hard and friable. Fast initial cutting, however SiC abrasive breaks down very fast so it is a "short-lived" abrasive
Zirconia	Very durable and hard abrasive. It is a longer lasting abrasive and is an excellent choice for belt grinders. The only drawback is that it requires higher grinding forces as compared to SiC and alumina abrasives



PENTA 5000A Metallographic Hand Grinder

Silicon Carbide (SiC) Abrasive Powders

SiC Abrasive Powders

PENTA-7500S Squaring and planarizing holder for metallographic mounts

PACE Product Name	Catalog Number	Qty	Price ($)
120 grit (P120-grit) SiC Powder (1 lb)	**SIC-120-P1**	1 lb	28.50
120 grit (P120-grit) SiC Powder (5 lbs)	**SIC-120-P5**	5 lbs	115.00
240 grit (P280-grit) SiC Powder (1 lb)	**SIC-240-P1**	1 lb	27.50
240 grit (P280-grit) SiC Powder (5 lbs)	**SIC-240-P5**	5 lbs	110.00
320 grit (P400-grit) SiC Powder (1 lb)	**SIC-320-P1**	1 lb	27.50
320 grit (P400-grit) SiC Powder (5 lbs)	**SIC-320-P5**	5 lbs	110.00
400 grit (P800-grit) SiC Powder (1 lb)	**SIC-400-P1**	1 lb	27.50
400 grit (P800-grit) SiC Powder (5 lbs)	**SIC-400-P5**	5 lbs	110.00
600 grit (P1200-grit) SiC Powder (1 lb)	**SIC-600-P1**	1 lb	27.50
600 grit (P1200-grit) SiC Powder (5 lbs)	**SIC-600-P5**	5 lbs	110.00
800 grit (P2400-grit) SiC Powder (1 lb)	**SIC-800-P1**	1 lb	35.50
800 grit (P2400-grit) SiC Powder (5 lbs)	**SIC-800-P5**	5 lbs	145.00
1000 grit (P3000-grit) SiC Powder (1 lb)	**SIC-1000-P1**	1 lb	35.50
1000 grit (P3000-grit) SiC Powder (5 lbs)	**SIC-1000-P5**	5 lbs	145.00
1200 grit (P4000-grit) SiC Powder (1 lb)	**SIC-1200-P1**	1 lb	35.50
1200 grit (P4000-grit) SiC Powder (5 lbs)	**SIC-1200-P5**	5 lbs	145.00

Silicon Carbide Powders:

- The main application for grinding with silicon carbide particles is in conjunction with flat lapping on hard metal plates such as cast iron. For metallographic specimen preparation, silicon carbide powders are used for grinding petrographic thin section specimens.

Silicon Carbide (SiC) Abrasive Rolls (3-7/16-inch width, 60-feet length, 1-inch core)

PACE Product Name	Catalog Number	Qty	Price ($)
120 grit SiC Abrasive Roll (each)	**SIC-120R-60**	each	88.00
240 grit SiC Abrasive Roll (each)	**SIC-240R-60**	each	62.00
320 grit SiC Abrasive Roll (each)	**SIC-320R-60**	each	62.00
360 grit SiC Abrasive Roll (each)	**SIC-360R-60**	each	62.00
400 grit SiC Abrasive Roll (each)	**SIC-400R-60**	each	62.00
600 grit SiC Abrasive Roll (each)	**SIC-600R-60**	each	62.00
800 grit SiC Abrasive Roll (each)	**SIC-800R-60**	each	90.00
1200 grit SiC Abrasive Roll (each)	**SIC-1200R-60**	each	90.00

SiC Abrasive Rolls

NANO-1000S

NANO-1000S

8-10 inch Single Wheel
Manual Grinder/Polisher

- Single wheel
- 8 and 10-inch wheel diameter options
- 1 hp dynamic torque servo motor (100-1000 rpm)
- Three programmable preset speeds and times for quick speed or time changes
- Easy to use control panel with 3-inch LCD screen
- Auto timer control
- User friendly, robust and durable

NANO-2000S

NANO-2000S

8-10 inch Dual Wheel
Manual Grinder/Polisher

- Dual wheel
- 8 and 10-inch wheel diameter options
- 1 hp dynamic torque servo motor (100-1000 rpm)
- Three programmable preset speeds and times for quick speed or time changes
- Easy to use control panel with 3-inch LCD screen
- Auto timer control
- User friendly, robust and durable

High Torque Dynamic Servo Motor

8-inch Working Wheel

Anodized 8-inch working wheel for NANO-S polishers
Catalog no. PW-800A

10-inch Working Wheel

Anodized 10-inch working wheel for NANO-S polishers
Catalog no. PW-1000A

8 /10-inch Splash Guard

Splash Guard for NANO-S Polisher
Catalog no. PTM-125-001

8 / 10-inch Cover

Polishing wheel cover for NANO-S polishers
Catalog no. PTM-125-007

8 & 10-inch Metallographic Polishers

2 year warranty
Limited Warranty

FEATURE	NANO-1000S DESCRIPTION	NANO-2000S DESCRIPTION
Motor power	1 hp (750 W) dynamic torque servo motor	1 hp (750 W) dynamic torque servo motor
Power head upgrade	FEMTO-1100S / FEMTO-1500S	FEMTO-1100S / FEMTO-1500S
Polishing wheels	Single - 8 &10-inch diameter	Double - 8 &10-inch diameter
Electrical specification	110 / 220V (50/60 Hz)	110 / 220V (50/60 Hz)
Speed (rpm)	Variable (100 - 1000 rpm) - Grinding (600-1000 rpm) - Polishing (100-600 rpm)	Variable (100 - 1000 rpm) - Grinding (600-1000 rpm) - Polishing (100-600 rpm)
Anodized Working wheels: 8-inch 10-inch	 Part no. PW-800A Part no. PW-1000A	 Part no. PW-800A Part no. PW-1000A
Dimensions (W x D x H)	16.5 x 15 x 15.2-inch (420 x 380 x 385 mm)	29.5 x 22.5 x 15.2-inch (751 x 571 x 385 mm)
Weight	63 lbs (29 kg)	80 lbs (36 kg)
Catalog Number	NANO-1000S	NANO-2000S
Optional	Recirculating filtering tank (RC-1000A)	Recirculating filtering tank (RC-1000A)

REQUEST A QUOTE
www.metallographic.com

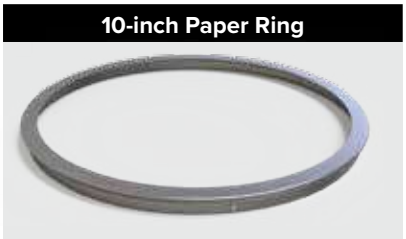
Benefits:

- Variable speed 100-1000 rpm, 1 rpm increments
- CCW and CW direction control
- Rapid programmable speed and time selection
- Timer (count down to zero and turns off) range from 1 second up to 99 minutes and 60 seconds
- Emergency stop switch
- Flexible / retractable water spout
- 1 hp (750W) high torque dynamic servo motor for constant torque over the full range of motor speeds
- Splash guard and cover
- Electrical connections for FEMTO-1100S/1500S auto polishing

8-inch Paper Ring

Paper rings for plain-backed papers
Catalog no. PTM-125-005 (8-inch)

10-inch Paper Ring



Paper rings for plain-backed papers
Catalog no. PTM-125-006 (10-inch)

NANO-S 8 & 10-inch Polisher Accessories	Catalog Number
8-inch diameter hard coat anodized aluminum working wheel	**PW-800A**
10-inch diameter hard coat anodized aluminum working wheel	**PW-1000A**
8 & 10-inch splash guard	**PTM-125-001**
8 & 10-inch cover	**PTM-125-007**
8-inch 304 stainless steel plain-backed grinding paper ring	**PTM-125-005**
10-inch 304 stainless steel plain-backed grinding paper ring	**PTM-125-006**

CE Machinery Directive 2006/42/EC

NANO-1200S

NEW

NANO-1200S

12-14 inch Single Wheel Manual Grinder/Polisher

- Single wheel
- 12 and 14-inch wheel diameter options
- 1.33 hp (1100W) motor (100-1000 rpm)
- Three programmable preset speeds and times for quick speed or time changes
- Easy to use control panel
- Auto timer control
- User friendly, robust and durable

12-inch Working Wheel

Anodized 12-inch working wheel for NANO-1200S polishers
Catalog no. PW-1200A

14-inch Working Wheel

Anodized 14-inch working wheel for NANO-1200S polishers
Catalog no. PW-1400A

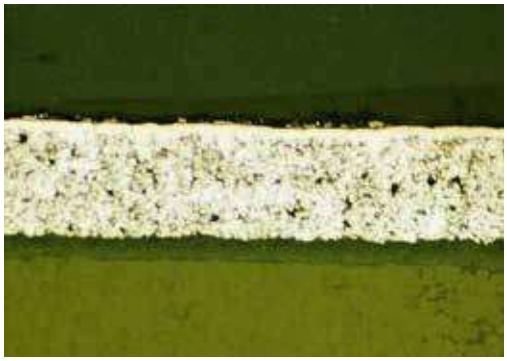
NANO-1200T Splash Guard

Splash Guard for NANO-1200S Polisher
Catalog no. PTM-225-207

12-inch Paper Ring

12-inch Paper ring for plain-backed papers
Catalog no. PTM-225-005 (12-inch)

SiC particles in a Si3N4 matrix , 1000X (DIC)



AlN substrate with a molybdenum/ nickel, gold coating 400X (B.F.)

12 & 14-inch Metallographic Polishers

2 year warranty
Limited Warranty

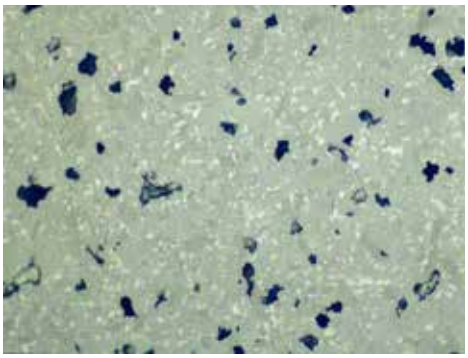
FEATURE	NANO-1200S DESCRIPTION
Motor power	1.33 hp (1000 W)
Power head upgrade	FEMTO-2200S / FEMTO-2500S
Polishing wheels	Single - 12 &14-inch diameter
Electrical specification	110 or 220V (50/60 Hz) pre wired at factory
Speed (rpm)	Variable (100 - 1000 rpm) - Grinding (600-1000 rpm) - Polishing (100-600 rpm)
Anodized Working wheels: **12-inch** **14-inch**	 Part no. PW-1200A Part no. PW-1400A
Dimensions (W x D x H)	20 x 16.5 x 25-inch (510 x 420 x 635 mm)
Weight	95 lbs (43 kg)
Catalog Number	NANO-1200S
Optional	Recirculating filtering tank (RC-1000A)

NANO-1200S 12 & 14-inch Polisher Accessories	Catalog Number
12-inch diameter hard coat anodized aluminum working wheel	**PW-1200A**
14-inch diameter hard coat anodized aluminum working wheel	**PW-1400A**
12 & 14-inch splash guard	**PTM-225-207**
12-inch 304 stainless steel plain-backed grinding paper ring	**PTM-225-005**

Benefits:

- Variable speed 100-1000 rpm
- CCW and CW direction control
- Rapid programmable speed and time selection
- Timer (count down to zero and turns off) range from 1 second up to 99 minutes and 60 seconds
- Emergency stop switch
- Swinging water spout
- 1.33 hp (1100W) motor
- Splash guard
- Electrical connections for FEMTO-2200S/2500S auto polishing

REQUEST A QUOTE
www.metallographic.com



BeO, 400X (B.F.) as polished condition

NANO-1200S / FEMTO-2200S Autopolisher

CE Machinery Directive 2006/42/EC

ZETA-2000S

Abrasive and Lubricant Dispenser

- 4 (24v) dedicated, programmable peristaltic pumps.
- Setting adjustments for frequency, duration, start time, total time
- 7-inch touchscreen interface
- Compatible with NANO polishing machines as well as competitors' polishing devices
- Controlled priming for each pump and dispensing lines for more immediate application of the abrasive / lubricant
- Flushing sequence for changing of abrasive/ lubricant options
- Flow 1.2~90 ml/min.
- Flex line for easy adjustment of dispensing nozzles
- 110/220V compatible
- Easy to use, robust and durable

RC-1000A

Recirculating / Filter System

- Series of three replaceable filters (0.2, 0.5 and 1 micron)
- Positive pressure 24V pump (connected to 110V/220V power supply)
- 1.3 GPM (5 liters/min) maximum flow
- Easy to use and easy to operate

ZETA-2000S Metallographic Abrasive Dispenser

2 year warranty
Limited Warranty

FEATURE	ZETA-2000S DESCRIPTION
Pumps	4 (24v) dedicated, programmable peristaltic pumps Setting adjustments for: - Frequency - Duration - Start time - Total time
Flow rates	1.2 - 90 ml/min.
Cleaning	Water flushing
Electrical specification	110 / 220V (50/60 Hz)
Dimensions (W x D x H)	9.5 x 10.6 x 12-inch (240 x 70 x 300 mm)
Weight	12 lbs (5.5 kg)
Catalog Number	ZETA-2000S

Benefits:

- Microprocessor controlled
- Can be used manually on competitors' equipment
- Interfaces with the FEMTO-S Auto Polishing heads for automated abrasive fluid dispensing
- Capable of dispensing NANOMETER alumina and SIAMAT colloidal silica and subsequently back flushing the lines to keep them clean and reusable

REQUEST A QUOTE
www.metallographic.com

RC-1000A Recirculating / Filter System

2 year warranty
Limited Warranty

FEATURE	RC-1000A DESCRIPTION
Filtering	Coarse (2-straining filters) Fine Filters (0.2, 0.5 and 1 µm)
Tank capacity	14 gallons (53 L)
Pump	24VDC Diaphragm Pump (1.3 GPM, 5 liters/min)
Electrical specification	110 / 220V (50/60 Hz)
Pressure	60 psi (0.42 MPa)
Dimensions (W x D x H)	31.5 x 16.5 x 19.5-inch (800 x 420 x 495 mm)
Weight	30 lbs (14 kg)
Catalog Number	RC-1000A

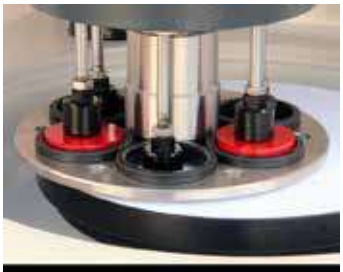
Benefits:

- Eliminates need for water and sewer hook-up
- Allows the polishing machine to be mobile
- Environmentally friendly
- Self-contained system

CE Machinery Directive 2006/42/EC

FEMTO-1500S

Central Fixed Force


Individual Force

FEMTO-1500S

Individual / Central Force Autopolishing Head

- FEMTO-1500S is a dual Individual and Central force specimen polishing head
- Compatible with the NANO-1000S and NANO-2000S polishers
- 7-inch touchscreen interface
- 0-300 rpm Variable Speed Head
- 0.54 hp (400W) high torque dynamic servo motor
- Single or Double Wheel Polisher
- Retractable water rinse on NANO polishing base
- Manual or Auto operation
- Contra or Complementary Direction with NANO-S polisher
- User friendly / Easy to Use
- Robust and Durable

FEMTO-1100S

Individual Force

FEMTO-1100S

Individual Force Autopolishing Head

- FEMTO-1100S is an Individual force polishing head
- Compatible with the NANO-1000S and NANO-2000S polishers
- 7-inch touchscreen interface
- 0-300 rpm Variable Speed Head
- 0.54 hp (400W) high torque dynamic servo motor
- Single or Double Wheel Polisher
- Retractable water rinse on NANO polishing base
- Manual or Auto operation
- Contra or Complementary Direction with NANO-S polisher
- User friendly / Easy to Use
- Robust and Durable

FEMTO 1500S Automated Metallographic Polishers

FEATURE	NANO-1000S / FEMTO-1500S DESCRIPTION	NANO-2000S / FEMTO-1500S DESCRIPTION
Polishing Wheels	8 & 10-inch single wheel	8 & 10-inch double wheel
Force application	Individual pistons (1-6 samples) Central force (3-6 samples)	Individual pistons (1-6 samples) Central force (3-6 samples)
Sample Holder	Quick release chuck	Quick release chuck
Motor power (FEMTO)	0.54 hp (400 W) dynamic torque servo motor	0.54 hp (400 W) dynamic torque servo motor
Motor power (NANO)	1 hp (750 W) dynamic torque servo motor	1 hp (750 W) dynamic torque servo motor
Electrical specification	110 / 220V (50/60 Hz)	110 / 220V (50/60 Hz)
Speed (rpm)	0-300 rpm	0-300 rpm
Relative Head:Base Direction	Complementary and Contra	Complementary and Contra
Dimensions (W x D x H)	16.25 x 21 x 26.25-inch (413 x 533 x 667 mm)	29.25 x 22 x 26.25-inch (750 x 560 x 667 mm)
Weight	128 lbs (58.2 kg)	185 lbs (84 kg)
Optional	ZETA-2000S abrasive dispenser	ZETA-2000S abrasive dispenser
Optional	RC-1000A filter/recirculating tank	RC-1000A filter/recirculating tank

2 year warranty
Limited Warranty

Benefits:

- Central and Individual polishing force
- Produces flatter specimens, especially useful for specimens having materials of different hardness (e.g. thermal spray coatings, electronic components, heat treated steels, etc.)
- Specimens can be polished in both the contra and complementary head / base directions

REQUEST A QUOTE
www.metallographic.com

FEMTO 1100S Automated Metallographic Polishers

FEATURE	NANO-1000S / FEMTO-1100S DESCRIPTION	NANO-2000S / FEMTO-1100S DESCRIPTION
Polishing Wheels	8 & 10-inch single wheel	8 & 10-inch double wheel
Force application	Individual pistons (1-6 samples)	Individual pistons (1-6 samples)
Sample Holder	Fixed holder	Fixed holder
Motor power (FEMTO)	0.54 hp (400 W) dynamic torque servo motor	0.54 hp (400 W) dynamic torque servo motor
Motor power (NANO)	1 hp (750 W) dynamic torque servo motor	1 hp (750 W) dynamic torque servo motor
Force	1.1 - 13.5 lbs (5- 60 N)	1.1 - 13.5 lbs (5- 60 N)
Speed (rpm)	0-300 rpm	0-300 rpm
Relative Head:Base Direction	Complementary and Contra	Complementary and Contra
Electrical specification	110 / 220V (50/60 Hz)	110 / 220V (50/60 Hz)
Dimensions (W x D x H)	16.25 x 21 x 26.25-inch (413 x 533 x 667 mm)	29.25 x 22 x 26.25-inch (750 x 560 x 667 mm)
Weight	128 lbs (58.2 kg)	185 lbs (84 kg)
Optional	ZETA-2000S abrasive dispenser	ZETA-2000S abrasive dispenser
Optional	RC-1000A filter/recirculating tank	RC-1000A filter/recirculating tank

2 year warranty
Limited Warranty

Benefits:

- Individual specimen polishing force
- Reduced number of preparation steps and lower cost for consumables
- Samples can be re-polished without having to planarize specimens in holder

CE Machinery Directive 2006/42/EC

FEMTO 1100S/1500S Individual Holder

1-inch Rings

1-inch diameter rings for FEMTO-1100S / 1500S (6/set)
Catalog no. SR-0100

1.25-inch Rings

1.25-inch diameter rings for FEMTO-1100S / 1500S (6/set)
Catalog no. SR-0125

1.5-inch Rings

1.5-inch diameter rings for FEMTO-1100S / 1500S (6/set)
Catalog no. SR-0150

2-inch Rings

2.0-inch diameter rings for FEMTO-1100S / 1500S (3/set)
Catalog no. SR-0200

25 mm Rings

25 mm diameter rings for FEMTO-1100S / 1500S (6/set)
Catalog no. SR-25mm

30 mm Rings

30 mm diameter rings for FEMTO-1100S / 1500S (6/set)
Catalog no. SR-30mm

40 mm Rings

40 mm diameter rings for FEMTO-1100S / 1500S (6/set)
Catalog no. SR-40mm

50 mm Rings

50 mm diameter rings for FEMTO-1100S / 1500S (3/set)
Catalog no. SR-50mm

FEMTO 1500S Central Holders

FEMTO-1500S 1-inch / 25 mm Central Sample Holder

Central 1-inch or 25 mm specimen holder for FEMTO-1500S
Catalog no. QRC-SH100A-1500

FEMTO-1500S 1.25-inch / 30 mm Central Sample Holder

Central 1.25-inch or 30 mm specimen holder for FEMTO-1500S
Catalog no. QRC-SH125A-1500

FEMTO-1500S 1.5-inch / 40 mm Central Sample Holder

Central 1.5-inch or 40 mm specimen holder for FEMTO-1500S
Catalog no. QRC-SH150A-1500

FEMTO-1500S 2-inch / 50 mm Central Sample Holder

Central 2-inch or 50 mm specimen holder for FEMTO-1500S
Catalog no. QRC-SH200A-1500

FEMTO-1100S 6-Ring Sample Holder

FEMTO-1100S individual specimen holder, requires 6 plastic rings ranging from 1-inch up to 1.5-inch or 25 mm up to 40 mm (ordered separately) **Catalog no. SH-1100**

FEMTO-1500S 6-Ring Sample Holder

FEMTO-1500S individual specimen holder, requires 6 plastic rings ranging from 1-inch up to 1.5-inch or 25 mm up to 40 mm (ordered separately) **Catalog no. SH-1150**

Individual Specimen Holder	FEMTO-1100S	FEMTO-1500S
Individual holder (6-ring) (1 to 1.5-inch & 25-40 mm mounts)	SH-1100	SH-1150
1-inch diameter rings (6/pkg)	SR-0100	SR-0100
1.25-inch diameter rings (6/pkg)	SR-0125	SR-0125
1.5-inch diameter rings (6/pkg)	SR-0150	SR-0150
25 mm diameter rings (6/pkg)	SR-25mm	SR-25mm
30 mm diameter rings (6/pkg)	SR-30mm	SR-30mm
40 mm diameter rings (6/pkg)	SR-40mm	SR-40mm

FEMTO-1100S 3-Ring Sample Holder

2-inch single specimen holder mounting fixture for FEMTO-1100S, requires one set of 3, 2-inch or 50 mm plastic rings (ordered separately) **Catalog no. SH-1200**

FEMTO-1500S 3-Ring Sample Holder

2-inch single specimen holder mounting fixture for FEMTO-1500S, requires one set of 3, 2-inch or 50 mm plastic rings (ordered separately) **Catalog no. SH-1250**

Individual Specimen Holder	FEMTO-1100S	FEMTO-1500S
Individual holder (3-ring) (2-inch & 50 mm mounts)	SH-1200	SH-1250
2-inch diameter rings (3/pkg)	SR-0200	SR-0200
50 mm diameter rings (3/pkg)	SR-50mm	SR-50mm
Individual holder for glass slide fixtures	SH-GHOLDER-1100	SH-GHOLDER-1500
Glass slide fixture for 27 x 47 mm & 1 x 3-inch slides (each)	SR-G	SR-G

FEMTO-1500S Central Sample Loading Plate

Central force loading plate
Catalog no. CF-LP-1500

Central Specimen Holder	FEMTO-1500S
1-inch / 25 mm central specimen holder (3-6 samples)	QRC-SH100A-1500
1.25-inch / 30 mm central specimen holder (3-6 samples)	QRC-SH125A-1500
1.5-inch / 40 mm central specimen holder (3-6 samples)	QRC-SH150A-1500
2-inch / 50 mm central specimen holder (3 samples)	QRC-SH200A-1500
Central Force Loading plate	CF-LP-1500

NANO-1200S/FEMTO-2200S

NEW

FEMTO-2200S/2500S

Autopolishing Head for Larger Working Areas

- FEMTO-2500S is a dual Individual and Central force specimen polishing head
- FEMTO-2200S is an Individual force polishing head
- Compatible with the NANO-1200S polisher
- 0-300 rpm Variable Speed Head
- Manual or Auto operation
- Contra or Complementary Direction
- User friendly / Easy to Use
- Robust and Durable

Individual vs. Central Force Automated Polishing

APPLICATION	ADVANTAGES	DISADVANTAGES
Individual Force	Reduced number of preparation steps and lowers cost for consumables	Can result in loss of flatness across the specimen if heavy duty coarse grinding is required
	Sample can be re-polished without having to planarize specimens in the holder	It is recommended that the grinding and polishing steps only be done at matching head and base speeds with the rotation being in the same direction
Central Force	Flatter specimens	Minimum of 3-samples are required in the holder
		Typically requires 1-3 additional coarser grinding steps to planarize all specimens
	Specimens can be polished in both the contra and complementary head / base directions	Additional grinding steps increase both consumables cost and total preparation time
		Coarser grinding can result in more surface and subsurface damage to the specimen
		Need to planarize specimens again if they are removed from the fixed holder

FEMTO 2200S/2500S Automated Metallographic Polishers

2 year warranty
Limited Warranty

FEATURE	NANO-1200S / FEMTO-2500S DESCRIPTION	NANO-1200S / FEMTO-2200S DESCRIPTION
Polishing Wheels	12 & 14-inch single wheel	12 & 14-inch single wheel
Force application	Individual pistons (1-6 samples) Central force (3+ samples)	Individual pistons (1-6 samples)
Electrical specification	110 / 220V (50/60 Hz) 1000 W (1.33 hp)	110 / 220V (50/60 Hz) 1000 W (1.33 hp)
Speed (rpm)	0-300 rpm	0-300 rpm
Relative Head:Base Direction	CW and CCW	CW and CCW
Dimensions (W x D x H)	23 x 18 x 26.25 inch (580 x 460 x 670 mm)	23 x 18 x 26.25 inch (580 x 460 x 670 mm)
Weight	150 lbs (68 kg) without polisher base	150 lbs (68 kg) without polisher base
Optional	RC-1000A filter/recirculating tank	RC-1000A filter/recirculating tank

Benefits:

- Central and Individual polishing force
- Produces flatter specimens, especially useful for specimens having materials of different hardness (e.g. thermal spray coatings, electronic components, heat treated steels, etc.)
- Specimens can be polished in both the contra and complementary head / base directions

REQUEST A QUOTE
www.metallographic.com

Central Fixed Force

Individual Force

CE Machinery Directive 2006/42/EC

Individual vs. Central Force Typical Preparation Requirements

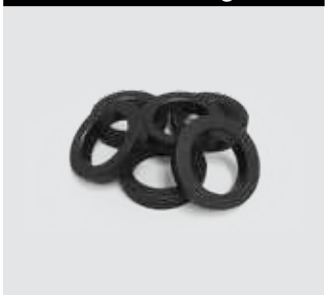
STEP	INDIVIDUAL FORCE	CENTRAL FORCE
Planar Grinding	n/a	120, 240 grit SiC
Rough Grinding	360, 600 grit SiC	360, 600 grit SiC
Fine Grinding	800, 1200 grit SiC	800, 1200 grit SiC
Intermediate Polishing	1 micron polycrystalline diamond on a woven pad	1 micron polycrystalline diamond on a woven pad
Final Polishing	0.05 micron NANOMETER alumina on a napped pad	0.05 micron NANOMETER alumina on a napped pad

FEMTO-2200S/2500S Individual Holder

1-inch Rings

1-inch diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-0100

1.25-inch Rings



1.25-inch diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-0125

1.5-inch Rings

1.5-inch diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-0150

2-inch Rings

2.0-inch diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-0200

25 mm Rings

25 mm diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-25mm

30 mm Rings

30 mm diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-30mm

40 mm Rings

40 mm diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-40mm

50 mm Rings

50 mm diameter rings for FEMTO-2200S / 2500S (6/set)
Catalog no. SR-50mm

FEMTO-2500S Central Holders

FEMTO-2500S 1-inch / 25 mm Central Sample Holder

Central 1-inch or 25 mm specimen holder for FEMTO-2500S
Catalog no. QRC-SH100A-2500

FEMTO-2500S 1.25-inch / 30 mm Central Sample Holder

Central 1.25-inch or 30 mm specimen holder for FEMTO-2500S
Catalog no. QRC-SH125A-2500

FEMTO-2500S 1.5-inch / 40 mm Central Sample Holder

Central 1.5-inch or 40 mm specimen holder for FEMTO-2500S
Catalog no. QRC-SH150A-2500

FEMTO-2500S 2-inch / 50 mm Central Sample Holder

Central 2.0-inch or 50 mm specimen holder for FEMTO-2500S
Catalog no. QRC-SH200A-2500

FEMTO-2200S 6-Ring Sample Holder

FEMTO-2200S individual specimen holder, requires 6 plastic rings ranging from 1-inch up to 1.5-inch or 25 mm up to 40 mm (ordered separately) **Catalog no. SH-2100**

FEMTO-2500S 6-Ring Sample Holder

FEMTO-2500S individual specimen holder, requires 6 plastic rings ranging from 1-inch up to 1.5-inch or 25 mm up to 40 mm (ordered separately) **Catalog no. SH-2150**

Individual Specimen Holder	FEMTO-2200S	FEMTO-2500S
Individual holder (6-ring) (1 to 1.5-inch & 25-40 mm mounts)	SH-2200	SH-2250
1-inch diameter rings (6/pkg)	SR-0100	SR-0100
1.25-inch diameter rings (6/pkg)	SR-0125	SR-0125
1.5-inch diameter rings (6/pkg)	SR-0150	SR-0150
25 mm diameter rings (6/pkg)	SR-25mm	SR-25mm
30 mm diameter rings (6/pkg)	SR-30mm	SR-30mm
40 mm diameter rings (6/pkg)	SR-40mm	SR-40mm

FEMTO-2200 6-Ring Sample Holder

2-inch single specimen holder mounting fixture for FEMTO -2200S, requires one set of 3, 2-inch or 50 mm plastic rings (ordered separately) **Catalog no. SH-2200**

FEMTO-2500 6-Ring Sample Holder

2-inch single specimen holder mounting fixture for FEMTO 2500S, requires one set of 6, 2-inch or 50 mm plastic rings (ordered separately) **Catalog no. SH-2250**

Individual Specimen Holder	FEMTO-2200S	FEMTO-2500S
Individual holder (3-ring) (2-inch & 50 mm mounts)	SH-2200	SH-2250
2.0-inch diameter rings (3/pkg)	SR-0200	SR-0200
50 mm diameter rings (3/pkg)	SR-50mm	SR-50mm
Individual holder for glass slide fixtures	SH-GHOLDER-2200	SH-GHOLDER-2500
Glass slide fixture for 27 x 47 mm & 1 x 3-inch slides (each)	SR-G	SR-G

FEMTO-2500S Central Sample Loading Plate

Central force loading plate
Catalog no. CF-LP-2500

Central Specimen Holder	FEMTO-2500S
1-inch / 25 mm central specimen holder (3-12 samples)	QRC-SH100A-2500
1.25-inch / 30 mm central specimen holder (3-12 samples)	QRC-SH125A-2500
1.5-inch / 40 mm central specimen holder (3-6 samples)	QRC-SH150A-2500
2-inch / 50 mm central specimen holder (3-6 samples)	QRC-SH200A-2500
Central Force Loading plate	CF-LP-2500

GIGA-S

GIGA-S

Vibratory Polisher

- Interchangeable bowl for the ability to polish on a 9 or 12-inch surface
- Utilizes a piezoelectric (PZT) motor for true electronic vibration
- Easy magnetic locking bowl attachment for quick cleaning and change out of polishing medium
- Two part bowl design for leak free operation
- New Pulse Mode feature for stain free polishing if left unattended after procedure has ended
- Removable, hinged, lid for easy cleaning
- Simple to use
- Robust
- Durable

1-inch Holders

1-inch diameter GIGA holder
Catalog no. VIB-0100

1.25-inch Holders

1.25-inch diameter GIGA holder
Catalog no. VIB-0125

1.5-inch Holders

1.5-inch diameter GIGA holder
Catalog no. VIB-0150

2-inch Holders

2-inch diameter GIGA holder
Catalog no. VIB-0200

1-inch Weights

1-inch diameter GIGA weight
Catalog no. VIB-WT-0100

1.25-inch Weights

1.25-inch diameter GIGA weight
Catalog no. VIB-WT-0125

1.5-inch Weights

1.5-inch diameter GIGA weight
Catalog no. VIB-WT-0150

2-inch Weights

2-inch diameter GIGA weight
Catalog no. VIB-WT-0200

GIGA-S Vibratory Metallographic Polishers

FEATURE	GIGA-S DESCRIPTION
Polishing Bowl size	9 or 12-inch
Drive Mechanism	PZT Motor
Electrical specification	110 / 240V (50/60 Hz)
Construction	Aluminum casting with SMC cover (injection molded)
Frequency	0~240Hz
Motor voltage	24VDC
Dimensions (W x D x H) (note: hood can also be removed)	Hood closed: 16.5 x 19.5 x 16-inch (420 x 495 x 406 mm) Hood open: 16.5 x 19.5 x 29.5-inch (420 x 495 x 750 mm)
Weight	135 lbs (62 kg)

2 year warranty
Limited Warranty

Benefits:

- Superior surface finishes
- Eliminates subsurface damage (has been shown to produce the best surface finish for EBSD sample preparation)
- Able to polish multiple samples simultaneously
- With correct CMP polishing abrasive, flatter or more planar finishes can be obtained over materials having a wide range of hardness'

REQUEST A QUOTE
www.metallographic.com

1 / 1.25-inch Mounting Plate

Mounting plate for 1 & 1.25-inch specimen holders
Catalog no. PLATE-0100

1.5 / 2-inch Mounting Plate

Mounting plate for 1.5 & 2-inch specimen holders
Catalog no. PLATE-0200

Plastic 9 &12-inch Polishing Bowls

Plastic 2-piece Interchangeable GIGA-S Polishing Bowls

Anodized Aluminum 9 & 12-inch Polishing Bowls

Anodized Aluminum 2-piece Interchangeable GIGA-S Polishing Bowls

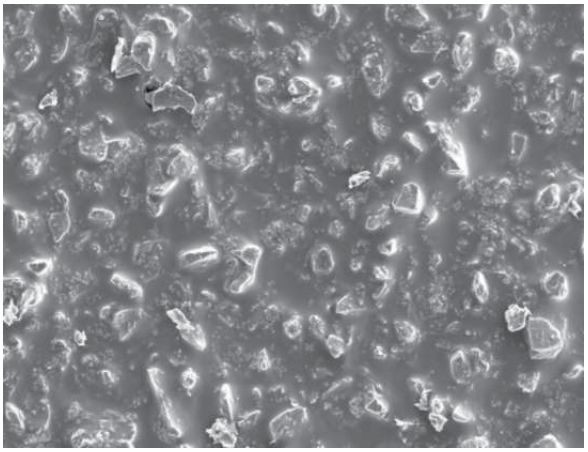
Vibratory Polishing Holder	Catalog Number
1-inch diameter 304 stainless steel specimen holders (each)	VIB-0100
1.25-inch diameter 304 stainless steel specimen holders (each)	VIB-0125
1.5-inch diameter 304 stainless steel specimen holders (each)	VIB-0150
2-inch diameter 304 stainless steel specimen holders (each)	VIB-0200
1-inch weight, 304 stainless steel (each)	VIB-WT-0100
1.25-inch weight, 304 stainless steel (each)	VIB-WT-0125
1.5-inch weight, 304 stainless steel (each)	VIB-WT-0150
2-inch weights 304 stainless steel (each)	VIB-WT-0200
Mounting plate for 1-inch and 1.25-inch holders	PLATE-0100
Mounting plate for 1.5-inch and 2-inch holders	PLATE-0200
9-inch plastic Interchangeable bowl	GS-9IN-BOWL
12-inch plastic Interchangeable bowl	GS-12IN-BOWL
9-inch aluminum Interchangeable bowl	GS-9IN-BOWL-AL
12-inch aluminum Interchangeable bowl	GS-12IN-BOWL-AL

CE Machinery Directive 2006/42/EC

Silicon Carbide Abrasives:

SiC is a manufactured abrasive produced by a high temperature reaction between silica and carbon. It has a hexagonal-rhombohedral crystal structure and a hardness of approximately 2500 HV. It is an ideal abrasive for cutting and grinding metallographic specimens because of its high hardness and sharp edges. It is also somewhat brittle, and therefore it cleaves easily to produce sharp new edges (self sharpening). SiC is an excellent abrasive for maximizing cutting rates while minimizing surface and subsurface damage. For metallographic preparation, SiC abrasives are used in abrasive blades and for coated abrasive grinding papers ranging from very coarse 60 grit to very fine 1200 (P4000) grit sizes.

Bonded or coated abrasive papers of SiC are designed so that the abrasive will have a large number of cutting points (negative abrasive rank angle). This is achieved by aligning the abrasive particles approximately normal to the backing. Note that coated abrasives are not quite coplanar, thus SiC papers produce the maximum efficiency (cut rate, stock removal and minimal damage) because new abrasive is exposed as the old abrasive breaks down.



SiC Grinding Characteristics:

- Easy to use
- Repeatable
- Relatively lower cost to other options
- Available with and without a pressure sensitive adhesive (PSA) backing

8-inch SiC Papers with Adhesive Backing, PSA (25/pkg)

120 grit 8-inch SiC Paper with PSA (25/pkg)
Catalog no. SIC-120P8-25

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch Combo Pack (5 each - 240, 360, 600, 800, 1200 grit SiC) (PSA)	**SIC-P08C**	5 each	65.00
8-inch 60 grit SIC (PSA)-25/pkg	**SIC-060P8-25**	25/pkg	55.00
8-inch 80 grit SIC (PSA)-25/pkg	**SIC-080P8-25**	25/pkg	55.00
8-inch 120 grit SIC (PSA)-25/pkg	**SIC-120P8-25**	25/pkg	45.00
8-inch 180 grit SIC (PSA)-25/pkg	**SIC-180P8-25**	25/pkg	45.00
8-inch 240 grit SIC (PSA)-25/pkg	**SIC-240P8-25**	25/pkg	36.00
8-inch 320 grit SIC (PSA)-25/pkg	**SIC-320P8-25**	25/pkg	36.00
8-inch 360 grit SIC (PSA)-25/pkg	**SIC-360P8-25**	25/pkg	36.00
8-inch 400 grit SIC (PSA)-25/pkg	**SIC-400P8-25**	25/pkg	36.00
8-inch 600 grit SIC (PSA)-25/pkg	**SIC-600P8-25**	25/pkg	36.00
8-inch 800 grit SIC (PSA)-25/pkg	**SIC-800P8-25**	25/pkg	69.00
8-inch 1000 grit SIC (PSA)-25/pkg	**SIC-1000P8-25**	25/pkg	69.00
8-inch 1200 grit SIC (PSA)-25/pkg	**SIC-1200P8-25**	25/pkg	69.00

SILICON CARBIDE ABRASIVE PAPER

8-inch Premium SiC Papers with Adhesive Backing, PSA (50/pkg)

1200 grit 8-inch SiC Paper with PSA (50/pkg)
Catalog no. SIC-1200P8-50

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 60 grit Premium (PSA)-50/pkg	**SIC-060P8-50**	50/pkg	120.00
8-inch 80 grit Premium (PSA)-50/pkg	**SIC-080P8-50**	50/pkg	120.00
8-inch 120 grit Premium (PSA)-50/pkg	**SIC-120P8-50**	50/pkg	110.00
8-inch 180 grit Premium (PSA)-50/pkg	**SIC-180P8-50**	50/pkg	110.00
8-inch 240 / P220 grit Premium (PSA)-50/pkg	**SIC-240P8-50**	50/pkg	105.00
8-inch 320 / P400 grit Premium (PSA)-50/pkg	**SIC-320P8-50**	50/pkg	105.00
8-inch 360 / P500 grit Premium (PSA)-50/pkg	**SIC-360P8-50**	50/pkg	105.00
8-inch 400 / P800 grit Premium (PSA)-50/pkg	**SIC-400P8-50**	50/pkg	105.00
8-inch 600 / P1200 grit Premium (PSA)-50/pkg	**SIC-600P8-50**	50/pkg	105.00
8-inch 800 / P2400 grit Premium (PSA)-50/pkg	**SIC-800P8-50**	50/pkg	165.00
8-inch 1000 / P3000 grit Premium (PSA)-50/pkg	**SIC-1000P8-50**	50/pkg	165.00
8-inch 1200 / P4000 grit Premium (PSA)-50/pkg	**SIC-1200P8-50**	50/pkg	165.00

8-inch SiC Papers with Adhesive Backing, PSA (100/pkg)

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 60 grit SIC (PSA)-100/pkg	**SIC-060P8-100**	100/pkg	150.00
8-inch 80 grit SIC (PSA)-100/pkg	**SIC-080P8-100**	100/pkg	145.00
8-inch 120 grit SIC (PSA)-100/pkg	**SIC-120P8-100**	100/pkg	122.00
8-inch 180 grit SIC (PSA)-100/pkg	**SIC-180P8-100**	100/pkg	122.00
8-inch 240 grit SIC (PSA)-100/pkg	**SIC-240P8-100**	100/pkg	122.00
8-inch 320 grit SIC (PSA)-100/pkg	**SIC-320P8-100**	100/pkg	122.00
8-inch 360 grit SIC (PSA)-100/pkg	**SIC-360P8-100**	100/pkg	122.00
8-inch 400 grit SIC (PSA)-100/pkg	**SIC-400P8-100**	100/pkg	122.00
8-inch 600 grit SIC (PSA)-100/pkg	**SIC-600P8-100**	100/pkg	122.00
8-inch 800 grit SIC (PSA)-100/pkg	**SIC-800P8-100**	100/pkg	215.00
8-inch 1000 grit SIC (PSA)-100/pkg	**SIC-1000P8-100**	100/pkg	215.00
8-inch 1200 grit SIC (PSA)-100/pkg	**SIC-1200P8-100**	100/pkg	215.00

1200 grit 8-inch SiC Paper with PSA (100/pkg)
Catalog no. SIC-1200P8-100

8-inch SILICON CARBIDE ABRASIVE PAPER

8-inch Premium SiC Papers Plain-backed Non-Adhesive Backed (50/pkg)

360 grit 8-inch SiC Plain-backed Paper (50/pkg)
Catalog no. SIC-2208-360

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 60 grit Premium (Plain)-50/pkg	**SIC-2208-060**	50/pkg	62.00
8-inch 80 grit Premium (Plain)-50/pkg	**SIC-2208-080**	50/pkg	62.00
8-inch 120 grit Premium (Plain)-50/pkg	**SIC-2208-120**	50/pkg	55.00
8-inch 180 grit Premium (Plain)-50/pkg	**SIC-2208-180**	50/pkg	55.00
8-inch 240 / P220 grit Premium (Plain)-50/pkg	**SIC-2208-240**	50/pkg	55.00
8-inch 320 / P400 grit Premium (Plain)-50/pkg	**SIC-2208-320**	50/pkg	55.00
8-inch 360 / P500 grit Premium (Plain)-50/pkg	**SIC-2208-360**	50/pkg	55.00
8-inch 400 / P800 grit Premium (Plain)-50/pkg	**SIC-2208-400**	50/pkg	55.00
8-inch 600 / P1200 grit Premium (Plain)-50/pkg	**SIC-2208-600**	50/pkg	55.00
8-inch 800 / P2400 grit Premium (Plain)-50/pkg	**SIC-2208-800**	50/pkg	110.00
8-inch 1000 / P3000 grit Premium (Plain)-50/pkg	**SIC-2208-1000**	50/pkg	110.00
8-inch 1200 / P4000 grit Premium (Plain)-50/pkg	**SIC-2208-1200**	50/pkg	110.00
8-inch Double-sided adhesive -10/pkg	DSA-08	10/pkg	35.00

8-inch SiC Papers Plain-backed Non-Adhesive Backed (100/pkg)

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 60 grit SIC (Plain)-100/pkg	**SIC-2108-060**	100/pkg	122.00
8-inch 80 grit SIC (Plain)-100/pkg	**SIC-2108-080**	100/pkg	122.00
8-inch 120 grit SIC (Plain)-100/pkg	**SIC-2108-120**	100/pkg	78.00
8-inch 180 grit SIC (Plain)-100/pkg	**SIC-2108-180**	100/pkg	78.00
8-inch 240 grit SIC (Plain)-100/pkg	**SIC-2108-240**	100/pkg	72.00
8-inch 320 grit SIC (Plain)-100/pkg	**SIC-2108-320**	100/pkg	72.00
8-inch 360 grit SIC (Plain)-100/pkg	**SIC-2108-360**	100/pkg	72.00
8-inch 400 grit SIC (Plain)-100/pkg	**SIC-2108-400**	100/pkg	72.00
8-inch 600 grit SIC (Plain)-100/pkg	**SIC-2108-600**	100/pkg	72.00
8-inch 800 grit SIC (Plain)-100/pkg	**SIC-2108-800**	100/pkg	155.00
8-inch 1000 grit SIC (Plain)-100/pkg	**SIC-2108-1000**	100/pkg	155.00
8-inch 1200 grit SIC (Plain)-100/pkg	**SIC-2108-1200**	100/pkg	155.00
8-inch Double-sided adhesive -10/pkg	**DSA-08**	10/pkg	35.00

360 grit 8-inch SiC Plain-backed Paper (100/pkg)
Catalog no. SIC-2108-360

Abrasive Grinding

Process Description

The machining parameters which affect the preparation of metallographic specimens include: grinding/polishing pressure, relative velocity distribution and the direction of grinding/polishing.

Preston's Equation has been used to describe the mechanical contributions of pressure and velocity to removal rates. Preston's Equation states that the removal rate is proportional to the velocity times the pressure.

Preston's Equation R = kPV

R= material removal rate
k= Preston coefficient
P= normal lapping force
V= relative tangential velocity between the lapping plate and work piece

Proper alignment and machine conditions produce flat planar samples

Improper alignment and machine conditions produce MRD

Grinding Pressure

Grinding and polishing pressure is dependent upon the applied force (pounds or Newtons) and the area of the specimen and mounting material. Pressure is defined as the Force/Area (psi, N/m² or Pa). For specimens significantly harder than the mounting compound, pressure is better defined as the force divided by the specimen surface area. Thus, for larger hard specimens higher grinding/polishing pressures increase stock removal rates, however higher pressure also increases the amount of surface and subsurface damage. Note for SiC grinding papers, as the abrasive grains dull and cut rates decrease, increasing grinding pressures can extend the life of the SiC paper.

Higher grinding and polishing pressures can also generate additional frictional heat which may actually be beneficial for the chemical mechanical polishing (CMP) of ceramics, minerals and composites. Likewise for extremely friable specimens such as nodular cast iron, higher pressures and lower relative velocity distributions can aid in retaining inclusions and secondary phases.

Grinding Direction

The orientation of the specimen can have a significant impact on the preparation results, especially for specimens with coatings. In general, when grinding and polishing materials with coatings the brittle component should be kept in compression. In other words, for brittle coatings the direction of the abrasive should be through the coating and into the substrate. Conversely, for brittle substrates with ductile coatings, the direction of the abrasive should be through the brittle substrate into the ductile coating.

Material Removal Differential (MRD)

The term MRD (material removal differential) has been used to describe the negative affect that occurs when the sample does not grind equally across the entire surface of the sample and to some extent the entire surface of the sample mount (see example).

A number of factors contribute the MRD, these include:

-Uneven wear on the abrasive paper, film or foil
-Mount does not track over the edge and/or center of the grinding paper
-Wide range in velocity distributions (contra direction)
-Large differences in hardness between the mount and the sample

MRD is typically more pronounced for SiC papers as the SiC abrasive is very hard and brittle and breaks down relatively fast.

To eliminate MRD:
-Align the sample holder on the FEMTO polishing head so that the sample tracks across the entire radius of the grinding paper.
-Rotate the FEMTO and NANO head at the same velocity and in the same direction.

10-inch SILICON CARBIDE ABRASIVE PAPERS

Silicon Carbide Converter:

PACE Technologies is an actual metallographic supplier that converts its own SiC papers, which provides better quality control, distribution and flexibility for supplying metallographic silicon carbide papers.

SiC Conversion Characteristics:

- PSA laminating
- Die cutting
- Relatively lower cost to produce
- Focus on metallographic vs. industrial graded products

10-inch SiC Papers with Adhesive Backing, PSA (25/pkg)

60 grit 10-inch SiC Paper with PSA (25/pkg)
Catalog no. SIC-060P10-25

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch Combo Pack (5 each - 240, 360, 600, 800, 1200 grit SiC) (PSA)	**SIC-P10C**	5 each	88.00
10-inch 60 grit SIC (PSA)-25/pkg	**SIC-060P10-25**	25/pkg	72.00
10-inch 80 grit SIC (PSA)-25/pkg	**SIC-080P10-25**	25/pkg	72.00
10-inch 120 grit SIC (PSA)-25/pkg	**SIC-120P10-25**	25/pkg	59.00
10-inch 180 grit SIC (PSA)-25/pkg	**SIC-180P10-25**	25/pkg	59.00
10-inch 240 grit SIC (PSA)-25/pkg	**SIC-240P10-25**	25/pkg	55.00
10-inch 320 grit SIC (PSA)-25/pkg	**SIC-320P10-25**	25/pkg	55.00
10-inch 360 grit SIC (PSA)-25/pkg	**SIC-360P10-25**	25/pkg	55.00
10-inch 400 grit SIC (PSA)-25/pkg	**SIC-400P10-25**	25/pkg	55.00
10-inch 600 grit SIC (PSA)-25/pkg	**SIC-600P10-25**	25/pkg	55.00
10-inch 800 grit SIC (PSA)-25/pkg	**SIC-800P10-25**	25/pkg	79.00
10-inch 1000 grit SIC (PSA)-25/pkg	**SIC-1000P10-25**	25/pkg	79.00
10-inch 1200 grit SIC (PSA)-25/pkg	**SIC-1200P10-25**	25/pkg	79.00

10-inch Premium SiC Papers with Adhesive Backing, PSA (50/pkg)

240 grit 10-inch SiC Paper with PSA (50/pkg)
Catalog no. SIC-240P10-50

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 60 grit Premium (PSA)-50/pkg	**SIC-060P10-50**	50/pkg	175.00
10-inch 80 grit Premium (PSA)-50/pkg	**SIC-080P10-50**	50/pkg	175.00
10-inch 120 grit Premium (PSA)-50/pkg	**SIC-120P10-50**	50/pkg	155.00
10-inch 180 grit Premium (PSA)-50/pkg	**SIC-180P10-50**	50/pkg	155.00
10-inch 240 / P220 grit Premium (PSA)-50/pkg	**SIC-240P10-50**	50/pkg	130.00
10-inch 320/ P400 grit Premium (PSA)-50/pkg	**SIC-320P10-50**	50/pkg	130.00
10-inch 360 / P400 grit Premium (PSA)-50/pkg	**SIC-360P10-50**	50/pkg	130.00
10-inch 400 / P800 grit Premium (PSA)-50/pkg	**SIC-400P10-50**	50/pkg	130.00
10-inch 600 / P1200 grit Premium (PSA)-50/pkg	**SIC-600P10-50**	50/pkg	130.00
10-inch 800 / P2400 grit Premium (PSA)-50/pkg	**SIC-800P10-50**	50/pkg	190.00
10-inch 1000 / P3000 grit Premium (PSA)-50/pkg	**SIC-1000P10-50**	50/pkg	190.00
10-inch 1200 / P4000 grit Premium (PSA)-50/pkg	**SIC-1200P10-50**	50/pkg	190.00

10-inch SiC Papers with Adhesive Backing, PSA (100/pkg)

240 grit 10-inch SiC Paper with PSA (100/pkg)
Catalog no. SIC-240P10-100

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 60 grit SIC (PSA)-100/pkg	**SIC-060P10-100**	100/pkg	205.00
10-inch 80 grit SIC (PSA)-100/pkg	**SIC-080P10-100**	100/pkg	205.00
10-inch 120 grit SIC (PSA)-100/pkg	**SIC-120P10-100**	100/pkg	162.00
10-inch 180 grit SIC (PSA)-100/pkg	**SIC-180P10-100**	100/pkg	162.00
10-inch 240 grit SIC (PSA)-100/pkg	**SIC-240P10-100**	100/pkg	155.00
10-inch 320 grit SIC (PSA)-100/pkg	**SIC-320P10-100**	100/pkg	155.00
10-inch 360 grit SIC (PSA)-100/pkg	**SIC-360P10-100**	100/pkg	155.00
10-inch 400 grit SIC (PSA)-100/pkg	**SIC-400P10-100**	100/pkg	155.00
10-inch 600 grit SIC (PSA)-100/pkg	**SIC-600P10-100**	100/pkg	155.00
10-inch 800 grit SIC (PSA)-100/pkg	**SIC-800P10-100**	100/pkg	242.00
10-inch 1000 grit SIC (PSA)-100/pkg	**SIC-1000P10-100**	100/pkg	242.00
10-inch 1200 grit SIC (PSA)-100/pkg	**SIC-1200P10-100**	100/pkg	242.00

Grinding Relative Velocity

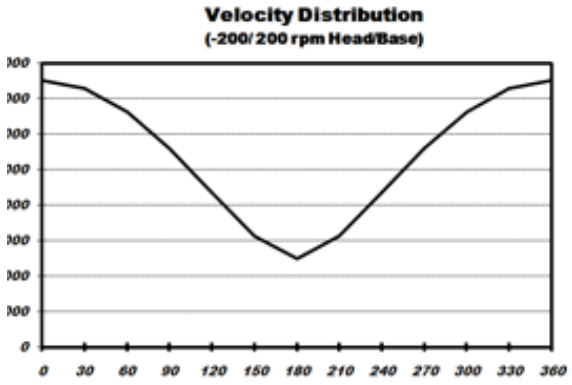
Current autopolishing grinding and polishing machines are designed with the specimens mounted in a disk holder and machined on a disk platen surface. This disk on disk rotation allows for a variable velocity distribution depending upon the head speed relative to the base speed.

NOTE: Matching the head and base speed, while running in the same direction produces better flatness and lower surface damage because this minimizes the velocity distribution across the sample as it rotates.

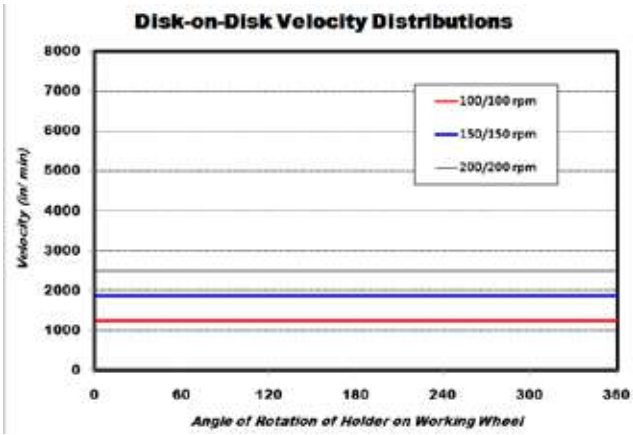
For high stock removal, a slower head speed relative to a higher base speed produces the most aggressive grinding and polishing operation. The drawback to high velocity distributions is that the abrasive (especially SiC papers) may not breakdown uniformly, this can result in non-uniform removal across the specimen surface. Another disadvantage is that the high velocity distributions can create substantially more specimen damage, especially in brittle phases. In all cases, it is not recommended to have the head rotating contra direction to the base because of the non-uniform removal and abrasive break-down which occurs.

Minimal relative velocity distributions can be obtained by rotating the head specimen disk at the same rpm and same direction as the base platen. This condition is best for retaining inclusions and brittle phases as well as for obtaining a uniform finish across the entire specimen. The disadvantage to low relative velocity distributions is that stock removal rates can be quite low.

In practice, the best condition to run the polishing machine is by matching the head and base speeds at 200-300 rpm and in the same direction. For polishing it is recommended that the speed be reduce to 100/100 rpm base/head speed. For final polishing under chemical mechanical polishing (CMP) conditions where frictional heat can enhance the chemical process, high speeds and high relative velocity distributions can be useful as long as brittle phases are not present (e.g. monolithic ceramics such as silicon nitride and alumina).



High relative velocity distribution for non-matching head and base speeds.



Constant relative velocity distribution for-matching head and base speeds

Head Speed (rpm)	Base Speed (rpm)	Relative Velocity Distribution	Characteristic	Application
100-150	300-600	High	-Aggressive stock removal -Differential grinding across the specimen surface	Useful for gross removal on hard specimens
200-300	200-300	Low	-Matching head and base speed in the same direction eliminates relative velocity distributions -Uniform stock removal -Low stock removal -Produces minimal damage	-Provides superior flatness over the specimen -Useful for retaining inclusions and brittle phases

250 mm (~10-inch) Premium SiC Papers Plain-backed Non-Adhesive Backed (50/pkg)

800 grit 10-inch SiC Plain-backed Paper (50/pkg)
Catalog no. SIC-2210-800

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 60 grit Premium (Plain)-50/pkg	**SIC-2210-060**	50/pkg	120.00
10-inch 80 grit Premium (Plain)-50/pkg	**SIC-2210-080**	50/pkg	120.00
10-inch 120 grit Premium (Plain)-50/pkg	**SIC-2210-120**	50/pkg	120.00
10-inch 180 grit Premium (Plain)-50/pkg	**SIC-2210-180**	50/pkg	120.00
10-inch 240 / P220 grit Premium (Plain)-50/pkg	**SIC-2210-240**	50/pkg	105.00
10-inch 320 / P400 grit Premium (Plain)-50/pkg	**SIC-2210-320**	50/pkg	105.00
10-inch 360 / P500 grit Premium (Plain)-50/pkg	**SIC-2210-360**	50/pkg	105.00
10-inch 400 / P800 grit Premium (Plain)-50/pkg	**SIC-2210-400**	50/pkg	105.00
10-inch 600 / P1200 grit Premium (Plain)-50/pkg	**SIC-2210-600**	50/pkg	105.00
10-inch 800 / P2400 grit Premium (Plain)-50/pkg	**SIC-2210-800**	50/pkg	155.00
10-inch 1000 / P3000 grit Premium (Plain)-50/pkg	**SIC-2210-1000**	50/pkg	155.00
10-inch 1200 / P4000 grit Premium (Plain)-50/pkg	**SIC-2210-1200**	50/pkg	155.00
10-inch Double-sided adhesive -10/pkg	**DSA-10**	10/pkg	55.00

250 mm (~10-inch) SiC Papers Plain-backed Non-Adhesive Backed (100/pkg)

800 grit 10-inch SiC Plain-backed Paper (100/pkg)
Catalog no. SIC-2110-800

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 60 grit SIC (Plain)-100/pkg	**SIC-2110-060**	100/pkg	170.00
10-inch 80 grit SIC (Plain)-100/pkg	**SIC-2110-080**	100/pkg	170.00
10-inch 120 grit SIC (Plain)-100/pkg	**SIC-2110-120**	100/pkg	145.00
10-inch 180 grit SIC (Plain)-100/pkg	**SIC-2110-180**	100/pkg	145.00
10-inch 240 grit SIC (Plain)-100/pkg	**SIC-2110-240**	100/pkg	138.00
10-inch 320 grit SIC (Plain)-100/pkg	**SIC-2110-320**	100/pkg	138.00
10-inch 360 grit SIC (Plain)-100/pkg	**SIC-2110-360**	100/pkg	138.00
10-inch 400 grit SIC (Plain)-100/pkg	**SIC-2110-400**	100/pkg	138.00
10-inch 600 grit SIC (Plain)-100/pkg	**SIC-2110-600**	100/pkg	138.00
10-inch 800 grit SIC (Plain)-100/pkg	**SIC-2110-800**	100/pkg	192.00
10-inch 1000 grit SIC (Plain)-100/pkg	**SIC-2110-1000**	100/pkg	192.00
10-inch 1200 grit SIC (Plain)-100/pkg	**SIC-2110-1200**	100/pkg	192.00
10-inch Double-sided adhesive -10/pkg	**DSA-10**	10/pkg	55.00

12-inch SILICON CARBIDE ABRASIVE PAPERS

12-inch SiC Papers with Adhesive Backing, PSA (25/pkg)

240 grit 12-inch SiC Paper with PSA (25/pkg)
Catalog no. SIC-240P12-25

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch Combo Pack (5 each - 240, 360, 600, 800, 1200 grit SiC) (PSA)	**SIC-P12C**	5 each	125.00
12-inch 60 grit SIC (PSA)-25/pkg	**SIC-060P12-25**	25/pkg	108.00
12-inch 80 grit SIC (PSA)-25/pkg	**SIC-080P12-25**	25/pkg	108.00
12-inch 120 grit SIC (PSA)-25/pkg	**SIC-120P12-25**	25/pkg	90.00
12-inch 180 grit SIC (PSA)-25/pkg	**SIC-180P12-25**	25/pkg	90.00
12-inch 240 grit SIC (PSA)-25/pkg	**SIC-240P12-25**	25/pkg	84.00
12-inch 320 grit SIC (PSA)-25/pkg	**SIC-320P12-25**	25/pkg	84.00
12-inch 360 grit SIC (PSA)-25/pkg	**SIC-360P12-25**	25/pkg	84.00
12-inch 400 grit SIC (PSA)-25/pkg	**SIC-400P12-25**	25/pkg	84.00
12-inch 600 grit SIC (PSA)-25/pkg	**SIC-600P12-25**	25/pkg	84.00
12-inch 800 grit SIC (PSA)-25/pkg	**SIC-800P12-25**	25/pkg	130.00
12-inch 1000 grit SIC (PSA)-25/pkg	**SIC-1000P12-25**	25/pkg	130.00
12-inch 1200 grit SIC (PSA)-25/pkg	**SIC-1200P12-25**	25/pkg	130.00

12-inch Premium SiC Papers with Adhesive Backing, PSA (50/pkg)

600 grit 12-inch SiC Paper with PSA (50/pkg)
Catalog no. SIC-600P12-50

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 60 grit Premium (PSA)-50/pkg	**SIC-060P12-50**	50/pkg	245.00
12-inch 80 grit Premium (PSA)-50/pkg	**SIC-080P12-50**	50/pkg	245.00
12-inch 120 grit Premium (PSA)-50/pkg	**SIC-120P12-50**	50/pkg	210.00
12-inch 180 grit Premium (PSA)-50/pkg	**SIC-180P12-50**	50/pkg	210.00
12-inch 240 grit Premium (PSA)-50/pkg	**SIC-240P12-50**	50/pkg	195.00
12-inch 320 grit Premium (PSA)-50/pkg	**SIC-320P12-50**	50/pkg	195.00
12-inch 360 grit Premium (PSA)-50/pkg	**SIC-360P12-50**	50/pkg	195.00
12-inch 400 grit Premium (PSA)-50/pkg	**SIC-400P12-50**	50/pkg	195.00
12-inch 600 grit Premium (PSA)-50/pkg	**SIC-600P12-50**	50/pkg	195.00
12-inch 800 grit Premium (PSA)-50/pkg	**SIC-800P12-50**	50/pkg	285.00
12-inch 1000 grit Premium (PSA)-50/pkg	**SIC-1000P12-50**	50/pkg	285.00
12-inch 1200 grit Premium (PSA)-50/pkg	**SIC-1200P12-50**	50/pkg	285.00

12-inch SiC Papers with Adhesive Backing, PSA (100/pkg)

600 grit 12-inch SiC Paper with PSA (100/pkg)
Catalog no. SIC-600P12-100

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 60 grit SIC (PSA)-100/pkg	**SIC-060P12-100**	100/pkg	275.00
12-inch 80 grit SIC (PSA)-100/pkg	**SIC-080P12-100**	100/pkg	275.00
12-inch 120 grit SIC (PSA)-100/pkg	**SIC-120P12-100**	100/pkg	240.00
12-inch 180 grit SIC (PSA)-100/pkg	**SIC-180P12-100**	100/pkg	240.00
12-inch 240 grit SIC (PSA)-100/pkg	**SIC-240P12-100**	100/pkg	230.00
12-inch 320 grit SIC (PSA)-100/pkg	**SIC-320P12-100**	100/pkg	230.00
12-inch 360 grit SIC (PSA)-100/pkg	**SIC-360P12-100**	100/pkg	230.00
12-inch 400 grit SIC (PSA)-100/pkg	**SIC-400P12-100**	100/pkg	230.00
12-inch 600 grit SIC (PSA)-100/pkg	**SIC-600P12-100**	100/pkg	230.00
12-inch 800 grit SIC (PSA)-100/pkg	**SIC-800P12-100**	100/pkg	360.00
12-inch 1000 grit SIC (PSA)-100/pkg	**SIC-1000P12-100**	100/pkg	360.00
12-inch 1200 grit SIC (PSA)-100/pkg	**SIC-1200P12-100**	100/pkg	360.00

Abrasive Grinding Recommend Procedures Application (Fixed-abrasive Grinding)

- Start with the finest abrasive possible (typically 240 or 320 grit abrasive paper) Note: Only use coarser grit for very heavy stock removal
- Apply lubricant to abrasive surface
- Most commonly water
- Water soluble oils for water sensitive specimens
- Rinse specimens thoroughly before proceeding to the next finer abrasive

Grinding Surface Backing

Grinding papers come with different types of backing

- Plain-backed or non-adhesive backing
- PSA or pressure sensitive backing
- Foil or polyester plastic backing

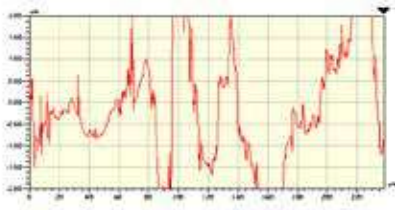
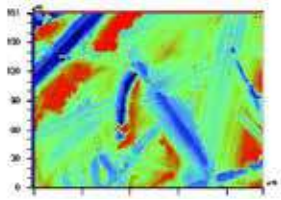
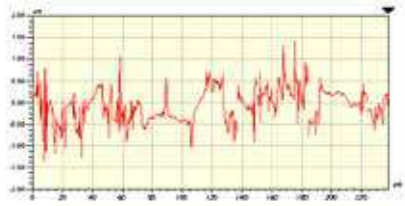
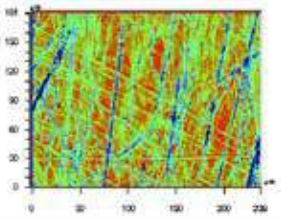
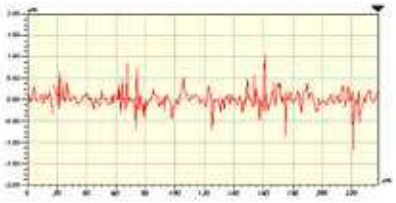
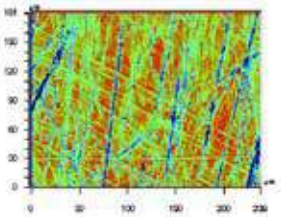
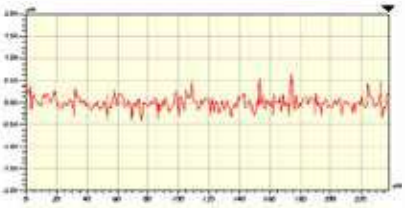
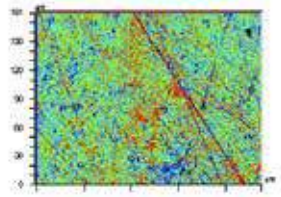
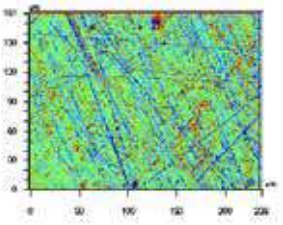
Plain-backed papers are the least expensive, however, they require either a double sided adhesive or a paper holding ring. The disadvantage to using a paper holding ring is that the mounted specimen cannot track over the edge of the grinding paper. Thus the paper does not break down uniformly and thus can produce over grinding of the mount away from the sample. This artifact results in the polished mount exhibiting a crescent moon which can affect the edge of the specimen. This artifact has also been known as "mooning" or MRD (material removal differential).

PSA-backed of adhesive backed papers are removable grinding papers. They are more expensive than the plain-backed papers and the foil papers. They are very easy to use and avoid the problems with "mooning" and MRD if the sample tracks over both the center and edge of the grinding papers.

Foil-backed or polyester backed grinding papers are easy to use and are more economical than adhesive backed papers. The system uses a receiver adhesive disk that can be washed in order to extend its life.

Standard grit	Median Diameter (microns)	Surface Roughness on Steel, Rc 30 (Ra –nm)
60	250	-
80	180	1140
120	106	1050
180	75	880
220	63	300
320	40.5	230
400	25.8	120
600	15.3	110
800	6.5	25
1200	2.5	20

12-inch SILICON CARBIDE ABRASIVE PAPERS

Abrasive / Surface	2-Line Profile	3-D Optical Contour Mapping
60-grit SiC		
240-grit SiC		
400-grit SiC		
600-grit SiC		
1200-grit SiC		

12-inch Premium SiC Papers Plain-backed Non-Adhesive Backed (50/pkg)

1000 grit 12-inch SiC Plain-backed Paper (50/pkg)
Catalog no. SIC-2212-1000

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 60 grit Premium (Plain)-50/pkg	**SIC-2212-060**	50/pkg	145.00
12-inch 80 grit Premium (Plain)-50/pkg	**SIC-2212-080**	50/pkg	145.00
12-inch 120 grit Premium (Plain)-50/pkg	**SIC-2212-120**	50/pkg	120.00
12-inch 180 grit Premium (Plain)-50/pkg	**SIC-2212-180**	50/pkg	120.00
12-inch 240 / P220 grit Premium (Plain)-50/pkg	**SIC-2212-240**	50/pkg	120.00
12-inch 320 / P400 grit Premium (Plain)-50/pkg	**SIC-2212-320**	50/pkg	120.00
12-inch 360 / P500 grit Premium (Plain)-50/pkg	**SIC-2212-360**	50/pkg	120.00
12-inch 400 / P800 grit Premium (Plain)-50/pkg	**SIC-2212-400**	50/pkg	120.00
12-inch 600 / P1200 grit Premium (Plain)-50/pkg	**SIC-2212-600**	50/pkg	120.00
12-inch 800 / P2400 grit Premium (Plain)-50/pkg	**SIC-2212-800**	50/pkg	225.00
12-inch 1000 / P3000 grit Premium (Plain)-50/pkg	**SIC-2212-1000**	50/pkg	225.00
12-inch 1200 / P4000 grit Premium (Plain)-50/pkg	**SIC-2212-1200**	50/pkg	225.00
12-inch Double-sided adhesive -10/pkg	**DSA-12**	10/pkg	67.50

12-inch SiC Papers Plain-backed Non-Adhesive Backed (100/pkg)

1000 grit 12-inch SiC Plain-backed Paper (100/pkg)
Catalog no. SIC-2112-1000

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 60 grit SIC (Plain)-100/pkg	**SIC-2112-060**	100/pkg	185.00
12-inch 80 grit SIC (Plain)-100/pkg	**SIC-2112-080**	100/pkg	185.00
12-inch 120 grit SIC (Plain)-100/pkg	**SIC-2112-120**	100/pkg	170.00
12-inch 180 grit SIC (Plain)-100/pkg	**SIC-2112-180**	100/pkg	170.00
12-inch 240 grit SIC (Plain)-100/pkg	**SIC-2112-240**	100/pkg	158.00
12-inch 320 grit SIC (Plain)-100/pkg	**SIC-2112-320**	100/pkg	158.00
12-inch 360 grit SIC (Plain)-100/pkg	**SIC-2112-360**	100/pkg	158.00
12-inch 400 grit SIC (Plain)-100/pkg	**SIC-2112-400**	100/pkg	158.00
12-inch 600 grit SIC (Plain)-100/pkg	**SIC-2112-600**	100/pkg	158.00
12-inch 800 grit SIC (Plain)-100/pkg	**SIC-2112-800**	100/pkg	295.00
12-inch 1000 grit SIC (Plain)-100/pkg	**SIC-2112-1000**	100/pkg	295.00
12-inch 1200 grit SIC (Plain)-100/pkg	**SIC-2112-1200**	100/pkg	295.00
12-inch Double-sided adhesive -10/pkg	**DSA-12**	10/pkg	67.50

14-inch SILICON CARBIDE ABRASIVE PAPERS

14-inch SiC Papers with Adhesive Backing, PSA (25/pkg)

120 grit 14-inch
SiC Paper with PSA (25/pkg)
Catalog no. SIC-120P14-25

PACE Product Name	Catalog Number	Qty	Price ($)
14-inch Combo Pack (5 each - 240, 360, 600, 800, 1200 grit SiC) (PSA)	**SIC-P14C**	5 each	170.00
14-inch 60 grit SIC (PSA)-25/pkg	**SIC-060P14-25**	25/pkg	155.00
14-inch 80 grit SIC (PSA)-25/pkg	**SIC-080P14-25**	25/pkg	155.00
14-inch 120 grit SIC (PSA)-25/pkg	**SIC-120P14-25**	25/pkg	130.00
14-inch 180 grit SIC (PSA)-25/pkg	**SIC-180P14-25**	25/pkg	130.00
14-inch 240 grit SIC (PSA)-25/pkg	**SIC-240P14-25**	25/pkg	115.00
14-inch 320 grit SIC (PSA)-25/pkg	**SIC-320P14-25**	25/pkg	115.00
14-inch 360 grit SIC (PSA)-25/pkg	**SIC-360P14-25**	25/pkg	115.00
14-inch 400 grit SIC (PSA)-25/pkg	**SIC-400P14-25**	25/pkg	115.00
14-inch 600 grit SIC (PSA)-25/pkg	**SIC-600P14-25**	25/pkg	115.00
14-inch 800 grit SIC (PSA)-25/pkg	**SIC-800P14-25**	25/pkg	195.00
14-inch 1000 grit SIC (PSA)-25/pkg	**SIC-1000P14-25**	25/pkg	195.00
14-inch 1200 grit SIC (PSA)-25/pkg	**SIC-1200P14-25**	25/pkg	195.00

14-inch Premium SiC Papers with Adhesive Backing, PSA (50/pkg)

400 grit 14-inch
SiC Paper with PSA (100/pkg)
Catalog no. SIC-400P14-50

PACE Product Name	Catalog Number	Qty	Price ($)
14-inch 60 grit Premium (PSA)-50/pkg	**SIC-060P14-50**	50/pkg	285.00
14-inch 80 grit Premium (PSA)-50/pkg	**SIC-080P14-50**	50/pkg	285.00
14-inch 120 grit Premium (PSA)-50/pkg	**SIC-120P14-50**	50/pkg	245.00
14-inch 180 grit Premium (PSA)-50/pkg	**SIC-180P14-50**	50/pkg	245.00
14-inch 240 grit Premium (PSA)-50/pkg	**SIC-240P14-50**	50/pkg	235.00
14-inch 320 grit Premium (PSA)-50/pkg	**SIC-320P14-50**	50/pkg	235.00
14-inch 360 grit Premium (PSA)-50/pkg	**SIC-360P14-50**	50/pkg	235.00
14-inch 400 grit Premium (PSA)-50/pkg	**SIC-400P14-50**	50/pkg	235.00
14-inch 600 grit Premium (PSA)-50/pkg	**SIC-600P14-50**	50/pkg	235.00
14-inch 800 grit Premium (PSA)-50/pkg	**SIC-800P14-50**	50/pkg	540.00
14-inch 1000 grit Premium (PSA)-50/pkg	**SIC-1000P14-50**	50/pkg	540.00
14-inch 1200 grit Premium (PSA)-50/pkg	**SIC-1200P14-50**	50/pkg	540.00

14-inch SiC Papers with Adhesive Backing, PSA (100/pkg)

600 grit 14-inch
SiC Paper with PSA (25/pkg)
Catalog no. SIC-600P14-100

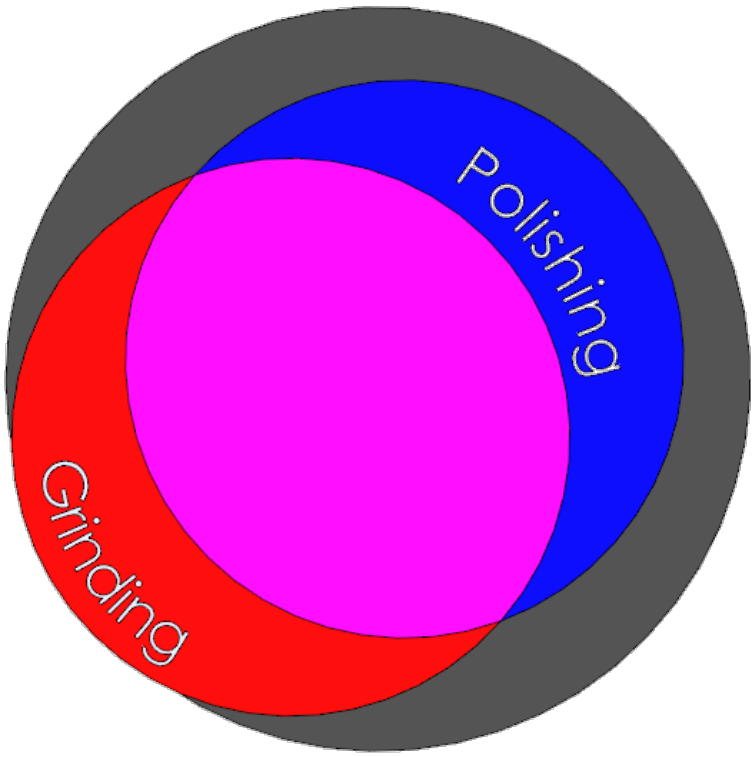
PACE Product Name	Catalog Number	Qty	Price ($)
14-inch 60 grit SIC (PSA)-100/pkg	**SIC-060P14-100**	100/pkg	350.00
14-inch 80 grit SIC (PSA)-100/pkg	**SIC-080P14-100**	100/pkg	350.00
14-inch 120 grit SIC (PSA)-100/pkg	**SIC-120P14-100**	100/pkg	320.00
14-inch 180 grit SIC (PSA)-100/pkg	**SIC-180P14-100**	100/pkg	320.00
14-inch 240 grit SIC (PSA)-100/pkg	**SIC-240P14-100**	100/pkg	310.00
14-inch 320 grit SIC (PSA)-100/pkg	**SIC-320P14-100**	100/pkg	310.00
14-inch 360 grit SIC (PSA)-100/pkg	**SIC-360P14-100**	100/pkg	310.00
14-inch 400 grit SIC (PSA)-100/pkg	**SIC-400P14-100**	100/pkg	310.00
14-inch 600 grit SIC (PSA)-100/pkg	**SIC-600P14-100**	100/pkg	310.00
14-inch 800 grit SIC (PSA)-100/pkg	**SIC-800P14-100**	100/pkg	720.00
14-inch 1000 grit SIC (PSA)-100/pkg	**SIC-1000P14-100**	100/pkg	720.00
14-inch 1200 grit SIC (PSA)-100/pkg	**SIC-1200P14-100**	100/pkg	720.00

NANO-S / FEMTO-S Auto Polishers

14-inch SILICON CARBIDE ABRASIVE PAPERS

14-inch Premium SiC Papers Plain-backed Non-Adhesive Backed (50/pkg)

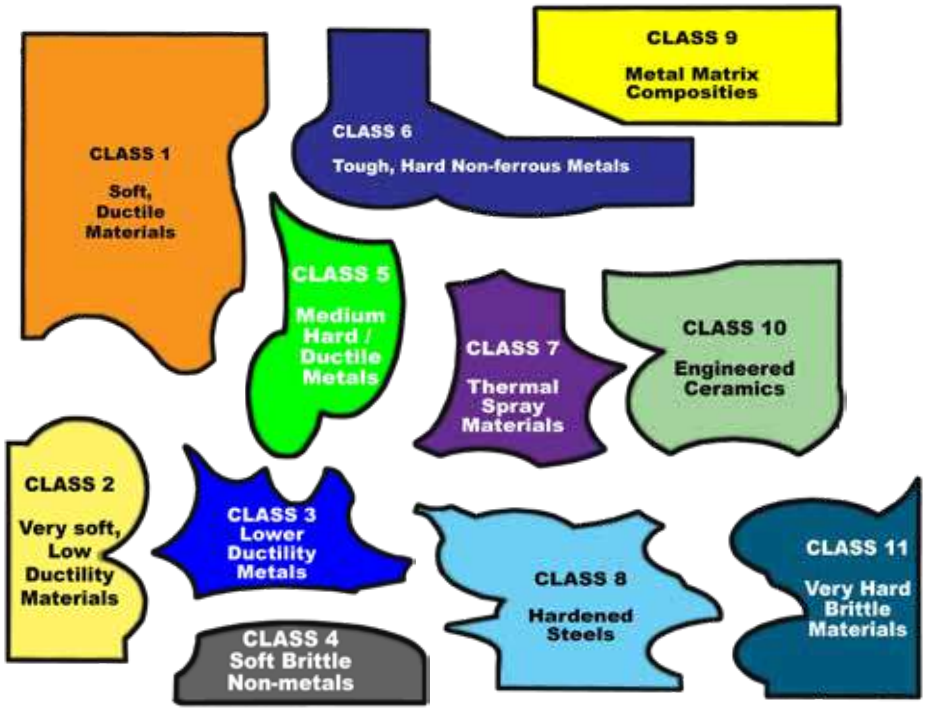
PACE Product Name	Catalog Number	Qty	Price ($)
14-inch 60 grit Premium (Plain)-50/pkg	**SIC-2214-060**	50/pkg	175.00
14-inch 80 grit Premium (Plain)-50/pkg	**SIC-2214-080**	50/pkg	175.00
14-inch 120 grit Premium (Plain)-50/pkg	**SIC-2214-120**	50/pkg	160.00
14-inch 180 grit Premium (Plain)-50/pkg	**SIC-2214-180**	50/pkg	160.00
14-inch 240 / P220 grit Premium (Plain)-50/pkg	**SIC-2214-240**	50/pkg	160.00
14-inch 320 / P400 grit Premium (Plain)-50/pkg	**SIC-2214-320**	50/pkg	160.00
14-inch 360 / P500 grit Premium (Plain)-50/pkg	**SIC-2214-360**	50/pkg	160.00
14-inch 400 / P800 grit Premium (Plain)-50/pkg	**SIC-2214-400**	50/pkg	160.00
14-inch 600 / P1200 grit Premium (Plain)-50/pkg	**SIC-2211-600**	50/pkg	160.00
14-inch 800 / P2400 grit Premium (Plain)-50/pkg	**SIC-2214-800**	50/pkg	365.00
14-inch 1000 / P3000 grit Premium (Plain)-50/pkg	**SIC-2214-1000**	50/pkg	365.00
14-inch 1200 / P4000 grit Premium (Plain)-50/pkg	**SIC-2214-1200**	50/pkg	365.00
14-inch Double-sided adhesive -10/pkg	**DSA-14**	10/pkg	80.00



Relative Position of the Auto Head to the Polishing Wheel

The FEMTO is equipped with an auto locating positioning feature. This feature ensures proper utilization and breakdown of grinding papers; it also extends the lifetime of polishing cloths. The FEMTO head is swung over the working wheel of the NANO polishing machine. Once dropped, it auto corrects and drops into the selected location. Auto positioning removes the non-repeatability of standard hand positioning of a polishing head.

Metallographic Sample Preparation



Metallographic CLASS Procedures Chart

Metallographic sample preparation can be broken down into specific preparation Classes based on the materials hardness and ductility.

14-inch SiC Papers Plain-backed Non-Adhesive Backed (100/pkg)

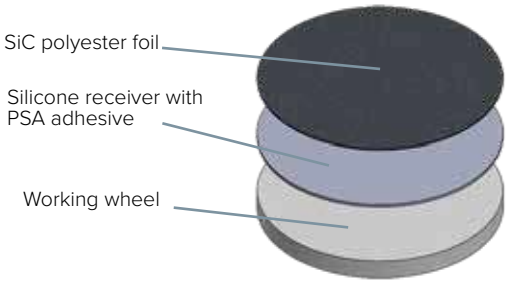
1200 grit 14-inch SiC Plain-backed Paper (100/pkg)
Catalog no. SIC-2114-1200

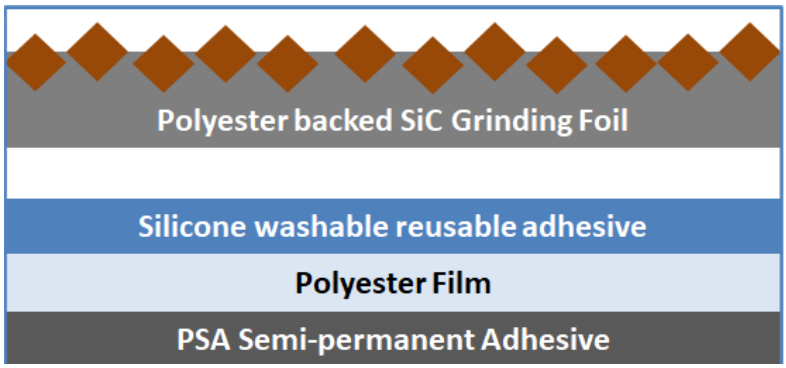
PACE Product Name	Catalog Number	Qty	Price ($)
14-inch 60 grit SIC (Plain)-100/pkg	**SIC-2114-060**	100/pkg	245.00
14-inch 80 grit SIC (Plain)-100/pkg	**SIC-2114-080**	100/pkg	245.00
14-inch 120 grit SIC (Plain)-100/pkg	**SIC-2114-120**	100/pkg	225.00
14-inch 180 grit SIC (Plain)-100/pkg	**SIC-2114-180**	100/pkg	225.00
14-inch 240 grit SIC (Plain)-100/pkg	**SIC-2114-240**	100/pkg	195.00
14-inch 320 grit SIC (Plain)-100/pkg	**SIC-2114-320**	100/pkg	195.00
14-inch 360 grit SIC (Plain)-100/pkg	**SIC-2114-360**	100/pkg	195.00
14-inch 400 grit SIC (Plain)-100/pkg	**SIC-2114-400**	100/pkg	195.00
14-inch 600 grit SIC (Plain)-100/pkg	**SIC-2114-600**	100/pkg	195.00
14-inch 800 grit SIC (Plain)-100/pkg	**SIC-2114-800**	100/pkg	490.00
14-inch 1000 grit SIC (Plain)-100/pkg	**SIC-2114-1000**	100/pkg	490.00
14-inch 1200 grit SIC (Plain)-100/pkg	**SIC-2114-1200**	100/pkg	490.00
14-inch Double-sided adhesive -10/pkg	**DSA-14**	10/pkg	80.00

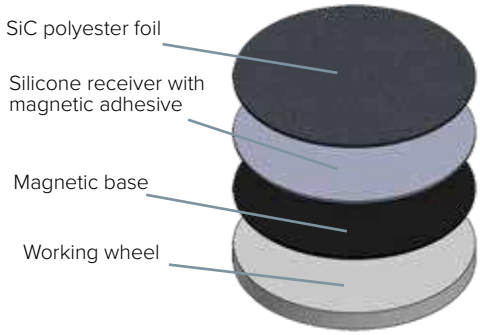
SILICON CARBIDE FOIL SYSTEM

Grinding Foils (alternative to PSA backed papers):

As an alternative to PSA (pressure sensitive adhesive) backed silicon carbide papers, PACE Technologies offers a non PSA-backed abrasive grinding foil system. Grinding foils utilize a polyester film backing which attaches to a reusable / washable silicone adhesive receiver disk. The grinding foil system offers a lower cost alternative to PSA-backed grinding papers.







120 grit (105 micron) front / back side SiC foil

600 grit (15 micron) front / back side SiC foil

Silicone (adhesive) Receiver Disk with PSA backing

240 grit (63 micron) front / back side SiC foil

800 grit (6 micron) front / back side SiC foil

360 grit (30 micron) front / back side SiC foil

1200 grit (2 micron) front / back side SiC foil

SiC Foil Characteristics:

- Lower cost compared to PSA backed papers
- Reusable / Washable Silicone backing material
- Easy to use
- Compatible with competitors products

Receiver Disks for SiC Foils (2/pkg)

Silicon Receiver Disks with PSA backing

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch Receivers for SiC Foils (PSA-backed)	**REC-5008**	2/pkg	105.00
10-inch Receivers for SiC Foils (PSA-backed)	**REC-5010**	2/pkg	135.00
12-inch Receivers for SiC Foils (PSA-backed)	**REC-5012**	2/pkg	165.00
8-inch Receivers for SiC Foils (magnetic-backed)	**MREC-5008**	2/pkg	125.00
10-inch Receivers for SiC Foils (magnetic-backed)	**MREC-5010**	2/pkg	160.00
12-inch Receivers for SiC Foils (magnetic-backed)	**MREC-5012**	2/pkg	185.00

8-inch SiC Foils with Polyester Film Backing (50/pkg)

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 120 grit (105 micron) - SiC Foils (50/pkg)	**SIC-5108-120**	50/pkg	62.00
8-inch 240 grit (63 micron) - SiC Foils (50/pkg)	**SIC-5108-240**	50/pkg	57.50
8-inch 360 grit (30 micron) - SiC Foils (50/pkg)	**SIC-5108-360**	50/pkg	57.50
8-inch 600 grit (15 micron) - SiC Foils (50/pkg)	**SIC-5108-600**	50/pkg	57.50
8-inch 800 grit (6.5 micron) - SiC Foils (50/pkg)	**SIC-5108-800**	50/pkg	72.50
8-inch 1200 grit (2.5 micron) - SiC Foils (50/pkg)	**SIC-5108-1200**	50/pkg	72.50

10-inch SiC Foils with Polyester Film Backing (50/pkg)

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 120 grit (105 micron) - SiC Foils (50/pkg)	**SIC-5110-120**	50/pkg	92.50
10-inch 240 grit (63 micron) - SiC Foils (50/pkg)	**SIC-5110-240**	50/pkg	88.50
10-inch 360 grit (30 micron) - SiC Foils (50/pkg)	**SIC-5110-360**	50/pkg	88.50
10-inch 600 grit (15 micron) - SiC Foils (50/pkg)	**SIC-5110-600**	50/pkg	88.50
10-inch 800 grit (6.5 micron) - SiC Foils (50/pkg)	**SIC-5110-800**	50/pkg	110.00
10-inch 1200 grit (2.5 micron) - SiC Foils (50/pkg)	**SIC-5110-1200**	50/pkg	110.00

12-inch SiC Foils with Polyester Film Backing (50/pkg)

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 120 grit (105 micron) - SiC Foils (50/pkg)	**SIC-5112-120**	50/pkg	112.00
12-inch 240 grit (63 micron) - SiC Foils (50/pkg)	**SIC-5112-240**	50/pkg	112.00
12-inch 360 grit (30 micron) - SiC Foils (50/pkg)	**SIC-5112-360**	50/pkg	112.00
12-inch 600 grit (15 micron) - SiC Foils (50/pkg)	**SIC-5112-600**	50/pkg	112.00
12-inch 800 grit (6.5 micron) - SiC Foils (50/pkg)	**SIC-5112-800**	50/pkg	140.00
12-inch 1200 grit (2.5 micron) - SiC Foils (50/pkg)	**SIC-5112-1200**	50/pkg	140.00

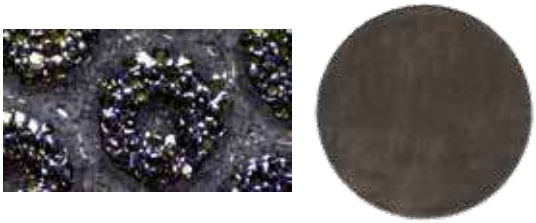
DIAMOND GRINDING

Diamond Grinding Disks:
Diamond grinding is most commonly used for grinding very hard brittle materials such as engineered ceramics. In practice, diamond grinding disks are also used to planar grind a wide range of other metals and minerals.

Diamond Bonding:
There are two types of bonding for diamond grinding disks: metal and resin. Metal bonded diamond grinding disks are more aggressive and can produce more damage. Resin bonded disks will break down easier to produce a better surface finish, however, they typically have lower life.

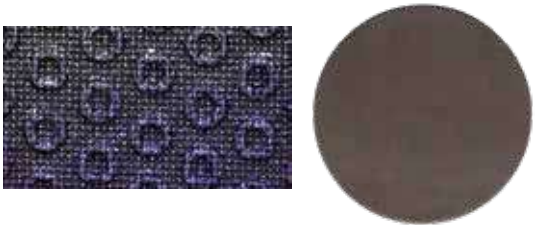
250 micron Metal Bonded Diamond Disk (20X close-up on left)

125 micron Metal Bonded Diamond Disk (20X close-up on left)

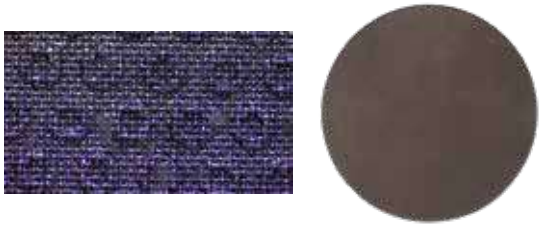


75 micron Metal Bonded Diamond Disk (20X close-up on left)

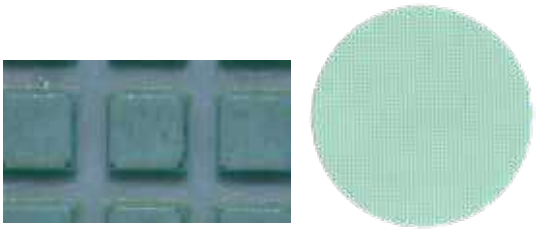
40 micron Metal Bonded Diamond Disk (20X close-up on left)



30 micron Metal Bonded Diamond Disk (20X close-up on left)



15 micron Metal Bonded Diamond Disk (20X close-up on left)

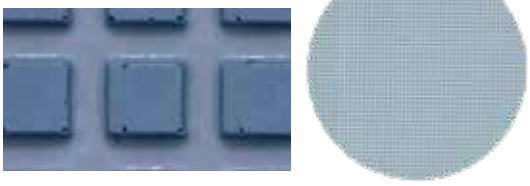


125 micron Resin Bonded Diamond Disk (10X close-up on left)

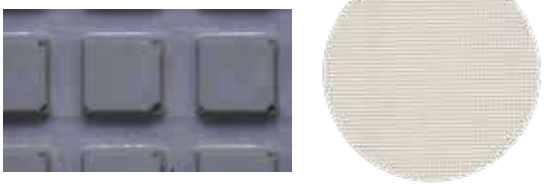
70 micron Resin Bonded Diamond Disk (10X close-up on left)

35 micron Resin Bonded Diamond Disk (10X close-up on left)

25 micron Resin Bonded Diamond Disk (10X close-up on left)



15 micron Resin Bonded Diamond Disk (10X close-up on left)

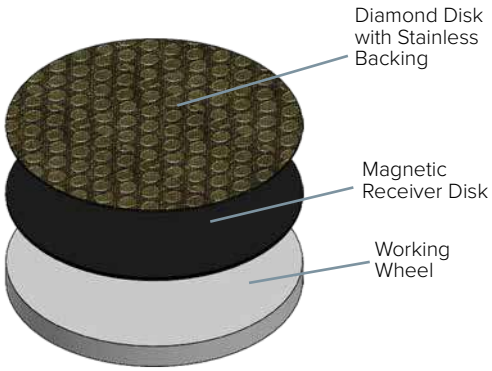


9 micron Resin Bonded Diamond Disk (10X close-up on left)

MAGNETIC BACKED DISKS

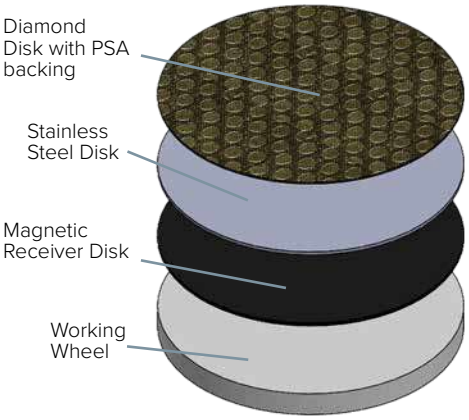
Diamond MD Grinding Disks:

As an alternative to PSA (pressure sensitive adhesives) diamond grinding disks, PACE Technologies offers magnetic backed (MD) abrasive diamond grinding disks. The magnetic diamond disks can be purchased pre-assembled on a magnetic stainless steel plate or the stainless steel plate can be purchased separately and the user can assemble the adhesive backed diamond grinding disks onto a magnetic stainless steel plate.



MD Grinding Disks:

- Easy to change disks
- More convenient for storage
- Do not need to dedicate a working wheel for each abrasive size



Magnetic Base Disks and Plates

PACE Product Name	Catalog No. (in)	Catalog No. (mm)	Qty	Price ($)
8-in / 200 mm MAGNETON Base Disk (PSA)	**MAG-B08**	**MAG-B200**	each	52.00
10-in / 250 mm MAGNETON Base Disk (PSA)	**MAG-B10**	**MAG-B250**	each	58.00
12-inch / 300 mm MAGNETON Base Disk (PSA)	**MAG-B12**	**MAG-B300**	each	65.00
14-inch MAGNETON Base Disk (PSA)	**MAG-B14**	**n.a.**	each	85.00

MAGNETON Base Disk

MAGNEPAD Stainless Steel Magnetic Plate

PACE Product Name	Catalog No. (inch)	Catalog No. (mm)	Qty	Price ($)
8-in / 200 mm MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P08**	**SSMAG-P200**	each	58.00
10-in / 250 mm MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P10**	**SSMAG-P250**	each	62.00
12-inch / 300 mm MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P12**	**SSMAG-P300**	each	68.00
14-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P14**	**n.a.**	each	95.00

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P08**	each	60.00
10-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P10**	each	65.00
12-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P12**	each	80.00
14-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P14**	each	120.00

MAGNEPAD Teflon Coated Magnetic Plate

DIAMOND GRINDING ABRASIVES (8-inch)

8-inch Metal Bonded Diamond Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 250 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M250-08-PSA**	each	215.00
8-inch 125 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M125-08-PSA**	each	215.00
8-inch 75 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M075-08-PSA**	each	199.50
8-inch 40 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M040-08-PSA**	each	199.50
8-inch 30 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M030-08-PSA**	each	199.50
8-inch 15 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M015-08-PSA**	each	199.50

8-inch Diamond Resin Bonded Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 125 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R125-08-PSA**	each	135.00
8-inch 70 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R070-08-PSA**	each	135.00
8-inch 35 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R035-08-PSA**	each	135.00
8-inch 25 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R025-08-PSA**	each	135.00
8-inch 15 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R015-08-PSA**	each	135.00
8-inch 9 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R009-08-PSA**	each	135.00

8-inch Composite Grinding Disks

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch MD ORION Composite Disk for 3-6 micron diamond suspensions	**ORION-MD08**	each	150.00
8-inch MD SIRIUS Composite Disk for 6-15 micron diamond suspensions	**SIRIUS-MD08**	each	150.00

8-inch ORION Composite Disk

8-inch Magnetic Plates

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch MAGNETON Base Disk (PSA)	**MAG-B08**	each	52.00
8-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P08**	each	58.00
8-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P08**	each	60.00

8-inch MAGNEPAD Teflon Base Plate

8-inch Metal Bonded Diamond Grinding Disk with Magnetic Backing

75 micron PSA Metal Bonded Diamond Disk

15 micron MAG Metal Bonded Diamond Disk

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 250 micron metal bonded Diamond Abrasive Grinding Disk with Magnetic backing	**DIA-M250-08-MAG**	each	225.00
8-inch 125 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M125-08-MAG**	each	225.00
8-inch 75 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M075-08-MAG**	each	199.50
8-inch 40 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing (each)	**DIA-M040-08-MAG**	each	199.50
8-inch 30 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M030-08-MAG**	each	199.50
8-inch 15 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M015-08-MAG**	each	199.50

8-inch Diamond Resin Bonded Grinding Disk with Magnetic Backing

35 micron PSA Resin Bonded Diamond Disk

9 micron MAG Resin Bonded Diamond Disk

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 125 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R125-08-MAG**	each	155.00
8-inch 70 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R070-08-MAG**	each	155.00
8-inch 35 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R035-08-MAG**	each	155.00
8-inch 25 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R025-08-MAG**	each	155.00
8-inch 15 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R015-08-MAG**	each	155.00
8-inch 9 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R009-08-MAG**	each	155.00

DIAMOND GRINDING ABRASIVES (10-inch)

10-inch Metal Bonded Diamond Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 250 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M250-10-PSA**	each	335.00
10-inch 125 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M125-10-PSA**	each	335.00
10-inch 75 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M075-10-PSA**	each	270.00
10-inch 40 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M040-10-PSA**	each	270.00
10-inch 30 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M030-10-PSA**	each	270.00
10-inch 15 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M015-10-PSA**	each	270.00

10-inch Diamond Resin Bonded Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 125 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R125-10-PSA**	each	178.00
10-inch 70 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R070-10-PSA**	each	178.00
10-inch 35 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R035-10-PSA**	each	178.00
10-inch 25 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R025-10-PSA**	each	178.00
10-inch 15 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R015-10-PSA**	each	178.00
10-inch 9 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R009-10-PSA**	each	178.00

10-inch Composite Grinding Disks

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch MD ORION Composite Disk for 3-6 micron diamond suspensions	**ORION-MD10**	each	175.00
10-inch MD SIRIUS Composite Disk for 6-15 micron diamond suspensions	**SIRIUS-MD10**	each	175.00

10-inch SIRIUS Composite Disk

10-inch Magnetic Plates

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch MAGNETON Base Disk (PSA)	**MAG-B10**	each	58.00
10-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P10**	each	62.00
10-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P10**	each	65.00

10-inch MAGNEPAD Stainless Steel Base Plate

10-inch Metal Bonded Diamond Grinding Disk with Magnetic Backing

125 micron PSA Metal Bonded Diamond Disk

30 micron MAG Metal Bonded Diamond Disk

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 250 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M250-10-MAG**	each	375.00
10-inch 125 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M125-10-MAG**	each	375.00
10-inch 75 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M075-10-MAG**	each	290.00
10-inch 40 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M040-10-MAG**	each	290.00
10-inch 30 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M030-10-MAG**	each	290.00
10-inch 15 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M015-10-MAG**	each	290.00

10-inch Diamond Resin Bonded Grinding Disk with Magnetic Backing

70 micron PSA Resin Bonded Diamond Disk

15 micron MAG Resin Bonded Diamond Disk

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 125 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R125-10-MAG**	each	199.50
10-inch 70 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R070-10-MAG**	each	199.50
10-inch 35 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R035-10-MAG**	each	199.50
10-inch 25 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R025-10-MAG**	each	199.50
10-inch 15 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R015-10-MAG**	each	199.50
10-inch 9 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R009-10-MAG**	each	199.50

DIAMOND GRINDING ABRASIVES (12-inch)

12-inch Metal Bonded Diamond Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 250 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M250-12-PSA**	each	415.00
12-inch 125 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M125-12-PSA**	each	415.00
12-inch 75 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M075-12-PSA**	each	395.00
12-inch 40 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M040-12-PSA**	each	395.00
12-inch 30 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M030-12-PSA**	each	395.00
12-inch 15 micron metal bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-M015-12-PSA**	each	395.00

12-inch Diamond Resin Bonded Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 125 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R125-12-PSA**	each	265.00
12-inch 70 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R070-12-PSA**	each	265.00
12-inch 35 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R035-12-PSA**	each	265.00
12-inch 25 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R025-12-PSA**	each	265.00
12-inch 15 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R015-12-PSA**	each	265.00
12-inch 9 micron resin bonded Diamond Abrasive Grinding Disk with PSA backing	**DIA-R009-12-PSA**	each	265.00

12-inch Composite Grinding Disks

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch MD ORION Composite Disk for 3-6 micron diamond suspensions	**ORION-MD12**	each	195.00
12-inch MD SIRIUS Composite Disk for 6-15 micron diamond suspensions	**SIRIUS-MD12**	each	195.00

12-inch ORION Composite Disk

12-inch Magnetic Plates

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch MAGNETON Base Disk (PSA)	**MAG-B12**	each	65.00
12-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P12**	each	68.00
12-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P12**	each	80.00

12-inch MAGNEPAD Teflon Base Plate

12-inch Metal Bonded Diamond Grinding Disk with Magnetic Backing

250 micron PSA Metal Bonded Diamond Disk

40 micron MAG Metal Bonded Diamond Disk

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 250 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M250-12-MAG**	each	450.00
12-inch 125 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M125-12-MAG**	each	450.00
12-inch 75 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M075-12-MAG**	each	385.00
12-inch 40 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M040-12-MAG**	each	385.00
12-inch 30 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M030-12-MAG**	each	385.00
12-inch 15 micron metal bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-M015-12-MAG**	each	385.00

12-inch Diamond Resin Bonded Grinding Disk with Magnetic Backing

125 micron PSA Resin Bonded Diamond Disk

25 micron MAG Resin Bonded Diamond Disk

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 125 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R125-12-MAG**	each	295.00
12-inch 70 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R070-12-MAG**	each	295.00
12-inch 35 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R035-12-MAG**	each	295.00
12-inch 25 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R025-12-MAG**	each	295.00
12-inch 15 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R015-12-MAG**	each	295.00
12-inch 9 micron resin bonded Diamond Abrasive Grinding Disk with magnetic backing	**DIA-R009-12-MAG**	each	295.00

PREMIUM DIAMOND GRINDING DISKS

8-inch Premium Metal Bonded Diamond Grinding Disk with PSA Adhesive

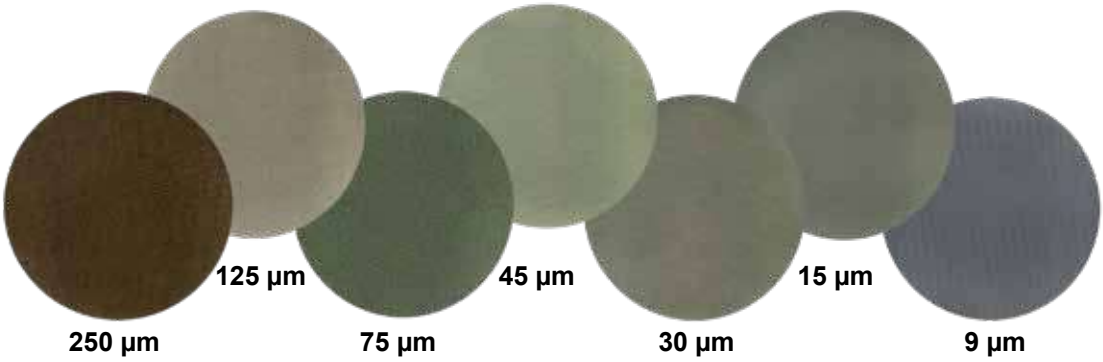
PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 250 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8250**	each	450.00
8-inch 125 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8125**	each	395.00
8-inch 75 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8075**	each	395.00
8-inch 45 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8045**	each	345.00
8-inch 30 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8030**	each	345.00
8-inch 15 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8015**	each	345.00
8-inch 9 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-8009**	each	345.00

10-inch Premium Metal Bonded Diamond Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 250 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10250**	each	765.00
10-inch 125 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10125**	each	710.00
10-inch 75 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10075**	each	710.00
10-inch 45 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10045**	each	710.00
10-inch 30 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10030**	each	655.00
10-inch 15 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10015**	each	655.00
10-inch 9 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-10009**	each	655.00

12-inch Premium Metal Bonded Diamond Grinding Disk with PSA Adhesive

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 250 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12250**	each	1080.00
12-inch 125 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12125**	each	1015.00
12-inch 75 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12075**	each	870.00
12-inch 45 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12045**	each	870.00
12-inch 30 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12030**	each	870.00
12-inch 15 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12015**	each	870.00
12-inch 9 micron Premium Diamond Abrasive Grinding Disk with PSA adhesive	**DIA-DISK-12009**	each	870.00



Magnetic Plates

Magnetic Plates	8-inch		10-inch		12-inch	
PACE Product Name	Cat. No.	Price ($)	Cat. No.	Price ($)	Cat. No.	Price ($)
MAGNETON Base Disk (PSA)	**MAG-B08**	52.00	**MAG-B10**	58.00	**MAG-B12**	65.00
MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P08**	58.00	**SSMAG-P10**	62.00	**SSMAG-P12**	68.00
MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P08**	60.00	**MAG-P10**	65.00	**MAG-P12**	80.00

8-inch Premium Metal Bonded Diamond Grinding Disk with Magnetic Backing

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch 250 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-250M**	each	475.00
8-inch 125 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-125M**	each	420.00
8-inch 75 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-75M**	each	420.00
8-inch 45 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-45M**	each	370.00
8-inch 30 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-30M**	each	370.00
8-inch 15 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-15M**	each	370.00
8-inch 9 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD8-09M**	each	370.00

10-inch Premium Metal Bonded Diamond Grinding Disk with Magnetic Backing

PACE Product Name	Catalog Number	Qty	Price ($)
10-inch 250 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-250M**	each	790.00
10-inch 125 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-125M**	each	735.00
10-inch 75 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-75M**	each	735.00
10-inch 45 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-45M**	each	735.00
10-inch 30 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-30M**	each	685.00
10-inch 15 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-15M**	each	685.00
10-inch 9 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD10-09M**	each	685.00

12-inch Premium Metal Bonded Diamond Grinding Disk with Magnetic Backing

PACE Product Name	Catalog Number	Qty	Price ($)
12-inch 250 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-250M**	each	1100.00
12-inch 125 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-125M**	each	1050.00
12-inch 75 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-75M**	each	895.00
12-inch 45 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-45M**	each	895.00
12-inch 30 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-30M**	each	895.00
12-inch 15 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-15M**	each	895.00
12-inch 9 micron Premium Diamond Abrasive Grinding Disk with magnetic backing	**PDGD12-09M**	each	895.00

ABRASIVE LAPPING

Lapping Films (Superior Flatness):

The primary advantage of coated abrasives on lapping films is improved flatness across the specimen surface. This is especially true for specimens that have a large variation in the hardness for the specimen constituents. The abrasive is coated onto a polyester film versus a paper backing. The result is a harder base surface. Typically abrasive lapping films include, alumina and diamond. Diamond lapping films are quite common for grinding and polishing of electronic components, including silicon dies. Alumina is very useful for softer materials, such as aluminum, tin, lead, zinc; refractory materials such as rhenium, tungsten and niobium; as well as specimens having solder joints or soft coatings.

Alumina lapping films micron size color guide

Lapping Film Characteristics:

- Produces flatter or more planar surfaces for materials having large variations in hardness
- Alternative to paper backed abrasive products

8-inch Alumina Lapping Films with Plain-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8105PB**	100/pkg	135.00
0.3 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8103PB**	100/pkg	135.00
1 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8001PB**	100/pkg	122.00
3 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8003PB**	100/pkg	122.00
5 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8005PB**	100/pkg	122.00
9 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8009PB**	100/pkg	122.00
12 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8012PB**	100/pkg	122.00
15 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8015PB**	100/pkg	122.00
30 micron alumina plain-backed lapping film (8-inch) - 100/pkg	**ALO-8030PB**	100/pkg	122.00

1 micron Alumina PB Lapping Film

5 micron Alumina PB Lapping Film

8-inch Alumina Lapping Films with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8105PSA**	100/pkg	185.00
0.3 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8103PSA**	100/pkg	185.00
1 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8001PSA**	100/pkg	168.00
3 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8003PSA**	100/pkg	168.00
5 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8005PSA**	100/pkg	168.00
9 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8009PSA**	100/pkg	168.00
12 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8012PSA**	100/pkg	168.00
15 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8015PSA**	100/pkg	168.00
30 micron alumina PSA adhesive-backed lapping film (8-inch) - 100/pkg	**ALO-8030PSA**	100/pkg	168.00

3 micron Alumina PSA Lapping Film

9 micron Alumina PSA Lapping Film

ABRASIVE LAPPING FILMS (8-inch)

8-inch Diamond Lapping Films with Plain-backing

1 micron Diamond PB Lapping Film

6 micron Diamond PB Lapping Film

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-01P8**	5/pkg	125.00
0.25 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-025P8**	5/pkg	125.00
0.50 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-05P8**	5/pkg	125.00
1 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-1P8**	5/pkg	125.00
3 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-3P8**	5/pkg	125.00
6 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-6P8**	5/pkg	125.00
9 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-9P8**	5/pkg	125.00
15 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-15P8**	5/pkg	125.00
30 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-30P8**	5/pkg	199.50
45 micron diamond lapping film, (plain-backed) (8-inch) - 5/pkg	**DA-45P8**	5/pkg	199.50

8-inch Diamond Lapping Films with Adhesive (PSA) Backing

0.10 micron Diamond PSA Lapping Film

9 micron Diamond PSA Lapping Film

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-01P8**	5/pkg	145.00
0.25 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-025P8**	5/pkg	145.00
0.50 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-05P8**	5/pkg	145.00
1 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-1P8**	5/pkg	145.00
3 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-3P8**	5/pkg	145.00
6 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-6P8**	5/pkg	145.00
9 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-9P8**	5/pkg	145.00
15 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-15P8**	5/pkg	145.00
30 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-30P8**	5/pkg	225.00
45 micron diamond PSA adhesive-backed lapping film (8-inch)- 5/pkg	**DAA-45P8**	5/pkg	225.00

Diamond lapping films micron size color guide

ABRASIVE LAPPING FILMS (10-inch)

10-inch Alumina Lapping Films with Plain-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-10105PB**	100/pkg	215.00
0.3 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-10103PB**	100/pkg	215.00
1 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1001PB**	100/pkg	195.00
3 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1003PB**	100/pkg	178.50
5 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1005PB**	100/pkg	178.50
9 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1009PB**	100/pkg	178.50
12 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1012PB**	100/pkg	178.50
15 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1015PB**	100/pkg	178.50
30 micron alumina plain-backed lapping film (10-inch) - 100/pkg	**ALO-1030PB**	100/pkg	178.50

3 micron Alumina PB Lapping Film

9 micron Alumina PB Lapping Film

10-inch Alumina Lapping Films with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-10105PSA**	100/pkg	320.00
0.3 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-10103PSA**	100/pkg	320.00
1 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1001PSA**	100/pkg	310.00
3 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1003PSA**	100/pkg	299.00
5 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1005PSA**	100/pkg	299.00
9 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1009PSA**	100/pkg	299.00
12 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1012PSA**	100/pkg	299.00
15 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1015PSA**	100/pkg	299.00
30 micron alumina PSA adhesive-backed lapping film (10-inch) - 100/pkg	**ALO-1030PSA**	100/pkg	299.00

12 micron Alumina PSA Lapping Film

30 micron Alumina PSA Lapping Film

Alumina lapping films micron size color guide

Diamond lapping films micron size color guide

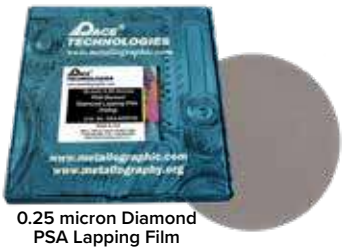
10-inch Diamond Lapping Films with Plain-backing

3 micron Diamond PB Lapping Film

9 micron Diamond PB Lapping Film

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-01P10**	5/pkg	185.00
0.25 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-025P10**	5/pkg	185.00
0.50 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-05P10**	5/pkg	185.00
1 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-1P10**	5/pkg	185.00
3 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-3P10**	5/pkg	185.00
6 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-6P10**	5/pkg	185.00
9 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-9P10**	5/pkg	185.00
15 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-15P10**	5/pkg	185.00
30 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-30P10**	5/pkg	225.00
45 micron diamond lapping film, (plain-backed) (10-inch) - 5/pkg	**DA-45P10**	5/pkg	225.00

10-inch Diamond Lapping Films with Adhesive (PSA) Backing



0.25 micron Diamond PSA Lapping Film

15 micron Diamond PSA Lapping Film

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-01P10**	5/pkg	215.00
0.25 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-025P10**	5/pkg	215.00
0.50 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-05P10**	5/pkg	215.00
1 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-1P10**	5/pkg	215.00
3 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-3P10**	5/pkg	215.00
6 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-6P10**	5/pkg	215.00
9 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-9P10**	5/pkg	215.00
15 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-15P10**	5/pkg	215.00
30 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-30P10**	5/pkg	260.00
45 micron diamond PSA adhesive-backed lapping film (10-inch)- 5/pkg	**DAA-45P10**	5/pkg	260.00

ABRASIVE LAPPING FILMS (12-inch)

12-inch Alumina Lapping Films with Plain-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-12105PB**	100/pkg	240.00
0.3 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-12103PB**	100/pkg	240.00
1 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1201PB**	100/pkg	225.00
3 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1203PB**	100/pkg	215.00
5 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1205PB**	100/pkg	215.00
9 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1209PB**	100/pkg	215.00
12 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1212PB**	100/pkg	215.00
15 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1215PB**	100/pkg	215.00
30 micron alumina plain-backed lapping film (12-inch) - 100/pkg	**ALO-1230PB**	100/pkg	215.00

5 micron Alumina PB Lapping Film

12 micron Alumina PB Lapping Film

12-inch Alumina Lapping Films with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-12105PSA**	100/pkg	355.00
0.3 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-12103PSA**	100/pkg	355.00
1 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1201PSA**	100/pkg	345.00
3 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1203PSA**	100/pkg	345.00
5 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1205PSA**	100/pkg	345.00
9 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1209PSA**	100/pkg	345.00
12 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1212PSA**	100/pkg	345.00
15 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1215PSA**	100/pkg	345.00
30 micron alumina PSA adhesive-backed lapping film (12-inch) - 100/pkg	**ALO-1230PSA**	100/pkg	345.00

9 micron Alumina PSA Lapping Film

30 micron Alumina PSA Lapping Film

Alumina lapping films micron size color guide

Diamond lapping films micron size color guide

12-inch Diamond Lapping Films with Plain-backing

6 micron Diamond PB Lapping Film

15 micron Diamond PB Lapping Film

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-01P12**	3/pkg	225.00
0.25 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-025P12**	3/pkg	225.00
0.50 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-05P12**	3/pkg	225.00
1 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-1P12**	3/pkg	225.00
3 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-3P12**	3/pkg	225.00
6 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-6P12**	3/pkg	225.00
9 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-9P12**	3/pkg	225.00
15 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-15P12**	3/pkg	225.00
30 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-30P12**	3/pkg	275.00
45 micron diamond lapping film, (plain-backed) (12-inch) - 5/pkg	**DA-45P12**	3/pkg	275.00

12-inch Diamond Lapping Films with Adhesive (PSA) Backing

0.5 micron Diamond PSA Lapping Film

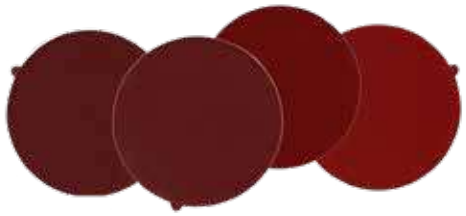
30 micron Diamond PSA Lapping Film

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-01P12**	3/pkg	265.00
0.25 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-025P12**	3/pkg	265.00
0.50 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-05P12**	3/pkg	265.00
1 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-1P12**	3/pkg	265.00
3 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-3P12**	3/pkg	265.00
6 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-6P12**	3/pkg	265.00
9 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-9P12**	3/pkg	265.00
15 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-15P12**	3/pkg	265.00
30 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-30P12**	3/pkg	310.00
45 micron diamond PSA adhesive-backed lapping film (12-inch)- 5/pkg	**DAA-45P12**	3/pkg	310.00

SPECIALTY ABRASIVE GRINDING SURFACES

Alumina Grinding Abrasives (Reduced Embedded Abrasives):

Alumina abrasives are typically used for grinding specimens that have a tendency to embed abrasive particles such as friable silicon carbide. Materials susceptible to embedding abrasive particles include low recrystallizing temperature metals such as tin, zinc and lead; electronic components containing solder joints; soft copper and aluminum metals; as well as, refractory metals such as rhenium, niobium and tungsten. Alumina abrasives are the better choice because they are more durable and do not fracture as easily.



Alumina Grinding Papers

8-inch Alumina Grinding Papers with Plain-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
P120 grit ALO plain-backed grinding paper (8-inch)-100/pkg	**ALO-2108-P120**	100/pkg	78.00
P220 grit ALO plain-backed grinding paper (8-inch)-100/pkg	**ALO-2108-P220**	100/pkg	78.00
P500 grit ALO plain-backed grinding paper (8-inch)-100/pkg	**ALO-2108-P500**	100/pkg	78.00
P1200 grit ALO plain-backed grinding paper (8-inch)-100/pkg	**ALO-2108-P1200**	100/pkg	78.00

10-inch Alumina Grinding Papers with Plain-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
P120 grit ALO plain-backed grinding paper (10-inch)-100/pkg	**ALO-2110-P120**	100/pkg	132.00
P220 grit ALO plain-backed grinding paper (10-inch)-100/pkg	**ALO-2110-P220**	100/pkg	132.00
P500 grit ALO plain-backed grinding paper (10-inch)-100/pkg	**ALO-2110-P500**	100/pkg	132.00
P1200 grit ALO plain-backed grinding paper (10-inch)-100/pkg	**ALO-2110-P1200**	100/pkg	132.00

12-inch Alumina Grinding Papers with Plain-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
P120 grit ALO plain-backed grinding paper (12-inch)-100/pkg	**ALO-2112-P120**	100/pkg	142.00
P220 grit ALO plain-backed grinding paper (12-inch)-100/pkg	**ALO-2112-P220**	100/pkg	142.00
P500 grit ALO plain-backed grinding paper (12-inch)-100/pkg	**ALO-2112-P500**	100/pkg	142.00
P1200 grit ALO plain-backed grinding paper (12-inch)-100/pkg	**ALO-2112-P1200**	100/pkg	142.00

Zirconia Grinding Abrasives (Very Durable Abrasive):

Zirconia is a very durable and hard abrasive. It is a longer lasting abrasive and is an excellent choice for belts grinders and for planar grinding steps on rotary grinder/polishers. The primary drawback is that zirconia grinding requires higher grinding forces as compared to SiC and alumina abrasives. It is also only available in coarser grit sizes.

8-inch Alumina Grinding Papers with PSA Adhesive-Backing

P220 grit 8-inch Alumina PSA-backed Paper (100/pkg) Catalog no. ALO-220P8-100

PACE Product Name	Catalog Number	Qty	Price ($)
P120 grit ALO PSA adhesive-backed grinding paper (8-inch)-100/pkg	**ALO-120P8-100**	100/pkg	132.00
P220 grit ALO PSA adhesive-backed grinding paper (8-inch)-100/pkg	**ALO-220P8-100**	100/pkg	132.00
P500 grit ALO PSA adhesive-backed grinding paper (8-inch)-100/pkg	**ALO-500P8-100**	100/pkg	132.00
P1200 grit ALO PSA adhesive-backed grinding paper (8-inch)-100/pkg	**ALO-1200P8-100**	100/pkg	132.00

10-inch Alumina Grinding Papers with PSA Adhesive-Backing

P500 grit 10-inch Alumina Plain-backed Paper (100/pkg) **Catalog no. ALO-2110-P500**

PACE Product Name	Catalog Number	Qty	Price ($)
P120 grit ALO PSA adhesive-backed grinding paper (10-inch)-100/pkg	**ALO-120P10-100**	100/pkg	158.00
P220 grit ALO PSA adhesive-backed grinding paper (10-inch)-100/pkg	**ALO-220P10-100**	100/pkg	158.00
P500 grit ALO PSA adhesive-backed grinding paper (10-inch)-100/pkg	**ALO-500P10-100**	100/pkg	158.00
P1200 grit ALO PSA adhesive-backed grinding paper (10-inch)-100/pkg	**ALO-1200P10-100**	100/pkg	158.00

12-inch Alumina Grinding Papers with PSA Adhesive-Backing

P1200 grit 12-inch Alumina PSA-backed Paper (100/pkg) **Catalog no. ALO-1200P12-100**

PACE Product Name	Catalog Number	Qty	Price ($)
P120 grit ALO PSA adhesive-backed grinding paper (12-inch)-100/pkg	**ALO-120P12-100**	100/pkg	265.00
P220 grit ALO PSA adhesive-backed grinding paper (12-inch)-100/pkg	**ALO-220P12-100**	100/pkg	265.00
P500 grit ALO PSA adhesive-backed grinding paper (12-inch)-100/pkg	**ALO-500P12-100**	100/pkg	265.00
P1200 grit ALO PSA adhesive-backed grinding paper (12-inch)-100/pkg	**ALO-1200P12-100**	100/pkg	265.00

Zirconia Grinding Papers with PSA Adhesive-Backing

Zirconia Grinding Papers

PACE Product Name	Catalog Number	Qty	Price ($)
120 grit Zirconia PSA adhesive-backed grinding paper (8-inch)-25/pkg	**ZR-120P08-25**	25/pkg	140.00
220 grit Zirconia PSA adhesive-backed grinding paper (8-inch)-25/pkg	**ZR-220P08-25**	25/pkg	140.00
120 grit Zirconia PSA adhesive-backed grinding paper (10-inch)-25/pkg	**ZR-120P10-25**	25/pkg	215.00
220 grit Zirconia PSA adhesive-backed grinding paper (10-inch)-25/pkg	**ZR-220P10-25**	25/pkg	215.00
120 grit Zirconia PSA adhesive-backed grinding paper (12-inch)-25/pkg	**ZR-120P12-25**	25/pkg	245.00
220 grit Zirconia PSA adhesive-backed grinding paper (12-inch)-25/pkg	**ZR-220P12-25**	25/pkg	245.00

Metallographic Polishing

Metallographic polishing can be broken into two polishing categories: rough polishing and final polishing. Proper polishing requires the correct combination of polishing pad and abrasive, as well as, utilizing proper polishing machine conditions (speed, direction and force).

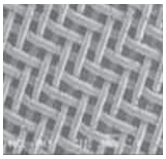
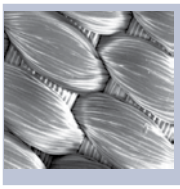
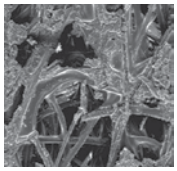
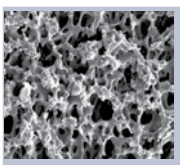
Minimizing Polishing Artifacts

To minimize polishing artifacts such as edge rounding, phase relief, smeared metal, grain pull-out and inclusion pull-out, the polishing time should be kept to a minimum. This can be accomplished by:

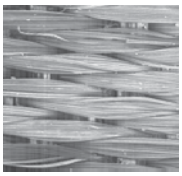
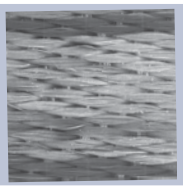
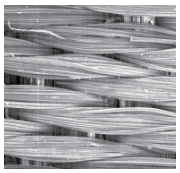
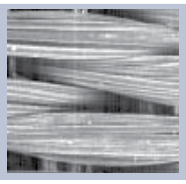
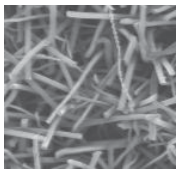
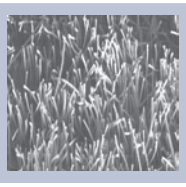
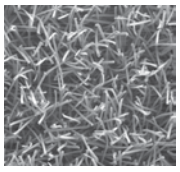
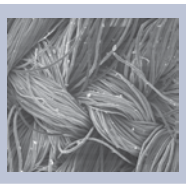
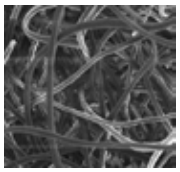
- minimizing sectioning damage
- grinding with the finest feasible abrasives
- using flat polishing base plates

Minimizing sectioning damage and using the correct grinding abrasives are fairly obvious. However, using a flat supporting plate is generally overlooked by most suppliers of metallographic equipment, and if they do consider plate flatness they generally do not go far enough. As a guideline, an 8-inch plate should have no more than a 0.0001 inch (2.5 micron) run out, which represents a 0.6 micron run out over a 1-inch diameter specimen. Recognize that final polishing abrasives have a typical size of 0.05-0.06 micron, thus these tolerances are required to minimize polishing times. In addition, if the specimen is not flat on the polishing plate then a differential pressure occurs across the specimen, which causes polishing relief. Likewise for a 12-inch diameter plate the run out should not exceed 0.0002 inches (5 micron). As a result both polishing times and differential polishing pressures can be minimized.

Suggestion: If your polishing plate is not flat within these tolerances they should be lapped to these tighter tolerances.

SEM Image	Polishing Pad Description	Abrasive Application	Product Image
	**CERMESH** Metal Mesh cloth - this is a wire mesh material useful for coarse and intermediate lapping/polishing. The texture of this wire allows for the abrasive to become semi-fixed; thus offering the advantage of increased stock removal, while minimizing damage	45, 30 or 15 micron diamond suspensions	
	**POLYPAD** Polishing Pad - this cloth is a synthetic polyester polishing pad which has a similar action to a nylon pad, with the exception that it is much more durable. It is used in the intermediate polishing steps	15, 9 or 6 micron diamond suspensions	
	**TEXPAN** Polishing Pad - this is the most commonly used polishing cloth material for the intermediate diamond polishing steps. TEXPAN Polishing pad is a non-woven polishing pad	9 or 6 micron diamond and 3 or 1 micron diamond with colloidal silica	
	**Black CHEM 2** Polishing Pad this is a porometric polymer pad which has a consistency similar to a rubber type of pad. Black CHEM 2 pad has a low nap but behaves as an intermediate polishing pad with a performance between low napped and high napped pads	Colloidal silica or diamond and colloidal silica mixtures	

METALLOGRAPHIC POLISHING PADS

SEM Image	Polishing Pad Description	Abrasive Application	Product Image
	**GOLDPAD** Polishing Pad is a woven polishing pad for intermediate polishing primarily with 1-9 micron diamond	9 or 6 micron diamond and 3 or 1 micron diamond with colloidal silica	
	**NYPAD** Polishing Pad - this is a woven silk polishing pad for intermediate polishing primarily with intermediate diamond abrasives	9 or 6 micron diamond and 3 or 1 micron diamond with colloidal silica	
	**DACRON II** Polishing Cloth - this is a woven polishing pad for polishing primarily with 1-15 micron diamond abrasives. The DACRON II pad is the most popular intermediate polishing pad in Europe and is used mostly for polishing metals. Its higher nap provides a very soft and gentle polishing action	3 or 1 micron diamond or alumina	
	**ATLANTIS** Polishing Pad - is a woven low polishing pad with a foam backing for better matting to the specimen sample. It is an excellent polishing pad for 1-6 micron diamond	3 or 1 micron diamond or alumina	
	**MICROPAD** Polishing Cloth - this is the most common high napped final polishing pad for most metals and polymers. Its high nap provides it a very soft and gentle polishing action	1 micron or finer final polishing diamond or alumina	
	**TRICOTE** Polishing Pad - a tight high napped final polishing pad for most metals. It has a tighter nap then the MICROPAD Polishing Pads	1 micron or finer final polishing diamond or alumina	
	**NAPPAD** Polishing Pad - this is another high napped final polishing pad useful for most metals and polymers. It has a higher nap than MICROPAD, providing it with a very gentle polishing action which is very useful for polishing soft materials such as copper, aluminum and austenitic steels	Alumina or colloidal silica polishing	
	**MOLTEC 2** Polishing Pad - this is wool polishing cloth used for final polishing and has a very high nap. It is most commonly used for final polishing metals where edge retention is a minimal consideration	Alumina or colloidal silica polishing	
	**FELT PAD** Polishing Pad - this is a thick felt pad used for final polishing glass and large surface area parts	Alumina or colloidal silica polishing	

METALLOGRAPHIC POLISHING PADS (8 & 9-inch)

8-inch Polishing Pads with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
8-inch CERMESH metal mesh cloth (5/pkg)	**CMESH-2008**	5/pkg	102.00
8-inch POLYPAD polishing pad (10/pkg)	**PP-6008**	10/pkg	68.00
Intermediate Diamond Polishing			
8-inch TEXPAN polishing pad (10/pkg)	**TP-5008**	10/pkg	60.00
8-inch DACRON II ® polishing pad (5/pkg)	**DC2-3008**	5/pkg	90.00
8-inch NYPAD polishing pad (10/pkg)	**NY-3008**	10/pkg	70.00
8-inch GOLDPAD polishing pad (10/pkg)	**GP-4008**	10/pkg	68.00
8-inch ATLANTIS polishing pad (5/pkg)	**ATL-3008**	5/pkg	55.00
Final Polishing			
8-inch TRICOTE polishing pad (10/pkg)	**TRI-4008**	10/pkg	55.00
8-inch MICROPAD polishing pad (10/pkg)	**MP-9008**	10/pkg	55.00
8-inch NAPPAD polishing pad (10/pkg)	**NP-7008**	10/pkg	55.00
8-inch MOLTEC 2 polishing pad (5/pkg)	**MT2-7008**	5/pkg	62.00
8-inch FELTPAD polishing pad (5/pkg)	**FP-8125-08**	5/pkg	62.00
CMP Polishing			
8-inch Black CHEM 2 polishing pad (10/pkg)	**BC2-8008**	10/pkg	135.00

8-inch CERMESH Pad
Catalog no. CERMESH-2008

8-inch POLYPAD Pad
Catalog no. PP-6008

8-inch Polishing Pads with Magnetic Rubber-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
8-inch CERMESH magnetic rubber metal mesh cloth (5/pkg)	**CMESH-2008-MAG**	5/pkg	122.00
8-inch POLYPAD magnetic rubber polishing pad (5/pkg)	**PP-6008-MAG**	5/pkg	75.00
Intermediate Diamond Polishing			
8-inch TEXPAN magnetic rubber polishing pad (5/pkg)	**TP-5008-MAG**	5/pkg	62.00
8-inch DACRON II ® magnetic rubber polishing pad (5/pkg)	**DC2-3008-MAG**	5/pkg	125.00
8-inch NYPAD magnetic rubber polishing pad (5/pkg)	**NY-3008-MAG**	5/pkg	65.00
8-inch GOLDPAD magnetic rubber polishing pad (5/pkg)	**GP-4008-MAG**	5/pkg	62.00
8-inch ATLANTIS magnetic rubber polishing pad (5/pkg)	**ATL-3008-MAG**	5/pkg	68.00
Final Polishing			
8-inch TRICOTE magnetic rubber polishing pad (5/pkg)	**TRI-4008-MAG**	5/pkg	78.00
8-inch MICROPAD magnetic rubber polishing pad (5/pkg)	**MP-9008-MAG**	5/pkg	62.00
8-inch NAPPAD magnetic rubber polishing pad (5/pkg)	**NP-7008-MAG**	5/pkg	60.00
8-inch MOLTEC 2 magnetic rubber polishing pad (5/pkg)	**MT2-7008-MAG**	5/pkg	72.00
8-inch FELTPAD magnetic rubber polishing pad (5/pkg)	**FP-8125-08-MAG**	5/pkg	75.00
CMP Polishing			
8-inch Black CHEM 2 magnetic rubber polishing pad (5/pkg)	**BC2-8008-MAG**	5/pkg	135.00

8-inch Polishing Pads with Magnetic Stainless Steel-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
8-inch CERMESH magnetic stainless steel metal mesh cloth (5/pkg)	**CMESH-2008-SSMAG**	5/pkg	135.00
8-inch POLYPAD magnetic stainless steel polishing pad (5/pkg)	**PP-6008-SSMAG**	5/pkg	92.00
Intermediate Diamond Polishing			
8-inch TEXPAN magnetic stainless steel polishing pad (5/pkg)	**TP-5008-SSMAG**	5/pkg	85.00
8-inch DACRON II ® magnetic stainless steel polishing pad (5/pkg)	**DC2-3008-SSMAG**	5/pkg	155.00
8-inch NYPAD magnetic stainless steel polishing pad (5/pkg)	**NY-3008-SSMAG**	5/pkg	90.00
8-inch GOLDPAD magnetic stainless steel polishing pad (5/pkg)	**GP-4008-SSMAG**	5/pkg	80.00
8-inch ATLANTIS magnetic stainless steel polishing pad (5/pkg)	**ATL-3008-SSMAG**	5/pkg	80.00
Final Polishing			
8-inch TRICOTE magnetic stainless steel polishing pad (5/pkg)	**TRI-4008-SSMAG**	5/pkg	85.00
8-inch MICROPAD magnetic stainless steel polishing pad (5/pkg)	**MP-9008-SSMAG**	5/pkg	80.00
8-inch NAPPAD magnetic stainless steel polishing pad (5/pkg)	**NP-7008-SSMAG**	5/pkg	82.00
8-inch MOLTEC 2 magnetic stainless steel polishing pad (5/pkg)	**MT2-7008-SSMAG**	5/pkg	80.00
8-inch FELTPAD magnetic stainless steel polishing pad (5/pkg)	**FP-8125-08-SSMAG**	5/pkg	80.00
CMP Polishing			
8-inch Black CHEM 2 magnetic stainless steel polishing pad (5/pkg)	**BC2-8008-SSMAG**	5/pkg	155.00

9-inch Polishing Pads with PSA Adhesive-Backing

8-inch DACRON MAG Pad
Catalog no. DC2-3008-MAG

8-inch MOLTEC MAG Pad
Catalog no. MT2-7008-MAG

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
9-inch CERMESH metal mesh cloth (5/pkg)	**CMESH-2009**	5/pkg	155.00
9-inch POLYPAD polishing pad (10/pkg)	**PP-6009**	10/pkg	90.00
Intermediate Diamond Polishing			
9-inch TEXPAN polishing pad (10/pkg)	**TP-5009**	10/pkg	78.00
9-inch NYPAD polishing pad (10/pkg)	**NY-3009**	10/pkg	80.00
9-inch GOLDPAD polishing pad (10/pkg)	**GP-4009**	10/pkg	80.00
9-inch ATLANTIS polishing pad (5/pkg)	**ATL-3009**	5/pkg	65.00
Final Polishing			
9-inch TRICOTE polishing pad (10/pkg)	**TRI-4009**	10/pkg	72.00
9-inch MICROPAD polishing pad (10/pkg)	**MP-9009**	10/pkg	65.00
9-inch NAPPAD polishing pad (10/pkg)	**NP-7009**	10/pkg	70.00
9-inch MOLTEC 2 polishing pad (5/pkg)	**MT2-7009**	5/pkg	80.00
9-inch FELTPAD polishing pad (5/pkg)	**FP-8125-09**	5/pkg	80.00
CMP Polishing			
9-inch Black CHEM 2 polishing pad (10/pkg)	**BC2-8009**	10/pkg	158.00

METALLOGRAPHIC POLISHING PADS (10-inch)

10-inch Polishing Pads with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
10-inch CERMESH metal mesh cloth (5/pkg)	**CMESH-2010**	5/pkg	175.00
10-inch POLYPAD polishing pad (10/pkg)	**PP-6010**	10/pkg	105.00
Intermediate Diamond Polishing			
10-inch TEXPAN polishing pad (10/pkg)	**TP-5010**	10/pkg	95.00
10-inch DACRON II ® polishing pad (5/pkg)	**DC2-3010**	5/pkg	115.00
10-inch NYPAD polishing pad (10/pkg)	**NY-3010**	10/pkg	90.00
10-inch GOLDPAD polishing pad (10/pkg)	**GP-4010**	10/pkg	90.00
10-inch ATLANTIS polishing pad (5/pkg)	**ATL-3010**	5/pkg	70.00
Final Polishing			
10-inch TRICOTE polishing pad (10/pkg)	**TRI-4010**	10/pkg	90.00
10-inch MICROPAD polishing pad (10/pkg)	**MP-9010**	10/pkg	78.00
10-inch NAPPAD polishing pad (10/pkg)	**NP-7010**	10/pkg	90.00
10-inch MOLTEC 2 polishing pad (5/pkg)	**MT2-7010**	5/pkg	80.00
10-inch FELTPAD polishing pad (5/pkg)	**FP-8125-10**	5/pkg	80.00
CMP Polishing			
10-inch Black CHEM 2 polishing pad (10/pkg)	**BC2-8010**	10/pkg	168.00

10-inch Black CHEM 2 Pad
Catalog no. BC2-8010

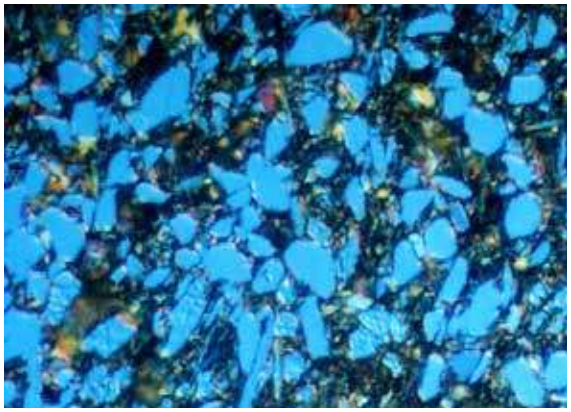
10-inch GOLDPAD Pad
Catalog no. GP-4010

10-inch Polishing Pads with Magnetic Rubber-Backing

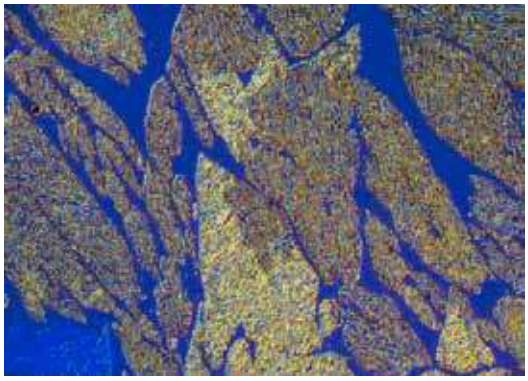
PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
10-inch CERMESH magnetic rubber metal mesh cloth (5/pkg)	**CMESH-2010-MAG**	5/pkg	205.00
10-inch POLYPAD magnetic rubber polishing pad (5/pkg)	**PP-6010-MAG**	5/pkg	95.00
Intermediate Diamond Polishing			
10-inch TEXPAN magnetic rubber polishing pad (5/pkg)	**TP-5010-MAG**	5/pkg	90.00
10-inch DACRON II ® magnetic rubber polishing pad (5/pkg)	**DC2-3010-MAG**	5/pkg	165.00
10-inch NYPAD magnetic rubber polishing pad (5/pkg)	**NY-3010-MAG**	5/pkg	90.00
10-inch GOLDPAD magnetic rubber polishing pad (5/pkg)	**GP-4010-MAG**	5/pkg	80.00
10-inch ATLANTIS magnetic rubber polishing pad (5/pkg)	**ATL-3010-MAG**	5/pkg	98.00
Final Polishing			
10-inch TRICOTE magnetic rubber polishing pad (5/pkg)	**TRI-4010-MAG**	5/pkg	115.00
10-inch MICROPAD magnetic rubber polishing pad (5/pkg)	**MP-9010-MAG**	5/pkg	80.00
10-inch NAPPAD magnetic rubber polishing pad (5/pkg)	**NP-7010-MAG**	5/pkg	80.00
10-inch MOLTEC 2 magnetic rubber polishing pad (5/pkg)	**MT2-7010-MAG**	5/pkg	110.00
10-inch FELTPAD magnetic rubber polishing pad (5/pkg)	**FP-8125-10-MAG**	5/pkg	112.00
CMP Polishing			
10-inch Black CHEM 2 magnetic rubber polishing pad (5/pkg)	**BC2-8010-MAG**	5/pkg	165.00

10-inch Polishing Pads with Magnetic Stainless Steel-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
10-inch CERMESH magnetic stainless steel metal mesh cloth (5/pkg)	**CMESH-2010-SSMAG**	5/pkg	220.00
10-inch POLYPAD magnetic stainless steel polishing pad (5/pkg)	**PP-6010-SSMAG**	5/pkg	135.00
Intermediate Diamond Polishing			
10-inch TEXPAN magnetic stainless steel polishing pad (5/pkg)	**TP-5010-SSMAG**	5/pkg	125.00
10-inch DACRON II ® magnetic stainless steel polishing pad (5/pkg)	**DC2-3010-SSMAG**	5/pkg	180.00
10-inch NYPAD magnetic stainless steel polishing pad (5/pkg)	**NY-3010-SSMAG**	5/pkg	135.00
10-inch GOLDPAD magnetic stainless steel polishing pad (5/pkg)	**GP-4010-SSMAG**	5/pkg	105.00
10-inch ATLANTIS magnetic stainless steel polishing pad (5/pkg)	**ATL-3010-SSMAG**	5/pkg	125.00
Final Polishing			
10-inch TRICOTE magnetic stainless steel polishing pad (5/pkg)	**TRI-4010-SSMAG**	5/pkg	130.00
10-inch MICROPAD magnetic stainless steel polishing pad (5/pkg)	**MP-9010-SSMAG**	5/pkg	112.00
10-inch NAPPAD magnetic stainless steel polishing pad (5/pkg)	**NP-7010-SSMAG**	5/pkg	112.00
10-inch MOLTEC 2 magnetic stainless steel polishing pad (5/pkg)	**MT2-7010-SSMAG**	5/pkg	125.00
10-inch FELTPAD magnetic stainless steel polishing pad (5/pkg)	**FP-8125-10-SSMAG**	5/pkg	125.00
CMP Polishing			
10-inch Black CHEM 2 magnetic stainless steel polishing pad (5/pkg)	**BC2-8010-SSMAG**	5/pkg	180.00



Zirconium Diboride particles in a Titanium Matrix, etched, 1000X (DIC)



431 Stainless Steel, mag. 400X, etched with Modified Murakami's

METALLOGRAPHIC POLISHING PADS (12-inch)

12-inch Polishing Pads with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
12-inch CERMESH metal mesh cloth (5/pkg)	**CMESH-2012**	5/pkg	215.00
12-inch POLYPAD polishing pad (10/pkg)	**PP-6012**	10/pkg	120.00
Intermediate Diamond Polishing			
12-inch TEXPAN polishing pad (10/pkg)	**TP-5012**	10/pkg	125.00
12-inch DACRON II ® polishing pad (5/pkg)	**DC2-3012**	5/pkg	165.00
12-inch NYPAD polishing pad (10/pkg)	**NY-3012**	10/pkg	125.00
12-inch GOLDPAD polishing pad (10/pkg)	**GP-4012**	10/pkg	125.00
12-inch ATLANTIS polishing pad (5/pkg)	**ATL-3012**	5/pkg	90.00
Final Polishing			
12-inch TRICOTE polishing pad (10/pkg)	**TRI-4012**	10/pkg	125.00
12-inch MICROPAD polishing pad (10/pkg)	**MP-9012**	10/pkg	105.00
12-inch NAPPAD polishing pad (10/pkg)	**NP-7012**	10/pkg	105.00
12-inch MOLTEC 2 polishing pad (5/pkg)	**MT2-7012**	5/pkg	102.00
12-inch FELTPAD polishing pad (5/pkg)	**FP-8125-12**	5/pkg	102.00
CMP Polishing			
12-inch Black CHEM 2 polishing pad (10/pkg)	**BC2-8012**	10/pkg	215.00

12-inch ATLANTIS Pad
Catalog no. ATL-3012

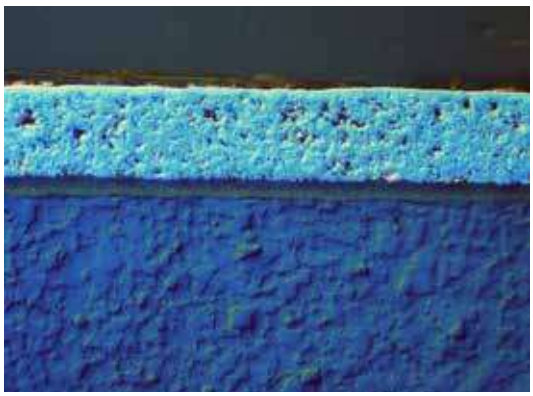
12-inch TRICOTE Pad
Catalog no. TRI-4012

12-inch Polishing Pads with Magnetic Rubber-Backing

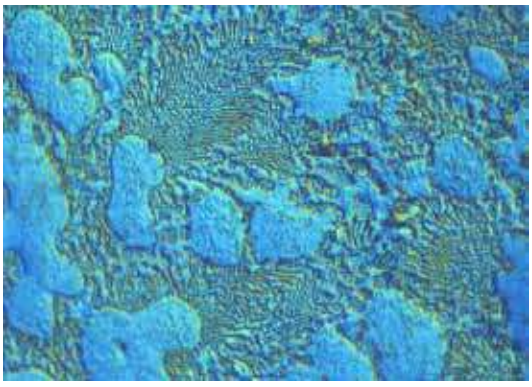
PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
12-inch CERMESH magnetic rubber metal mesh cloth (5/pkg)	**CMESH-2012-MAG**	5/pkg	310.00
12-inch POLYPAD magnetic rubber polishing pad (5/pkg)	**PP-6012-MAG**	5/pkg	125.00
Intermediate Diamond Polishing			
12-inch TEXPAN magnetic rubber polishing pad (5/pkg)	**TP-5012-MAG**	5/pkg	115.00
12-inch DACRON II ® magnetic rubber polishing pad (5/pkg)	**DC2-3012-MAG**	5/pkg	220.00
12-inch NYPAD magnetic rubber polishing pad (5/pkg)	**NY-3012-MAG**	5/pkg	112.00
12-inch GOLDPAD magnetic rubber polishing pad (5/pkg)	**GP-4012-MAG**	5/pkg	105.00
12-inch ATLANTIS magnetic rubber polishing pad (5/pkg)	**ATL-3012-MAG**	5/pkg	185.00
Final Polishing			
12-inch TRICOTE magnetic rubber polishing pad (5/pkg)	**TRI-4012-MAG**	5/pkg	145.00
12-inch MICROPAD magnetic rubber polishing pad (5/pkg)	**MP-9012-MAG**	5/pkg	115.00
12-inch NAPPAD magnetic rubber polishing pad (5/pkg)	**NP-7012-MAG**	5/pkg	112.00
12-inch MOLTEC 2 magnetic rubber polishing pad (5/pkg)	**MT2-7012-MAG**	5/pkg	155.00
12-inch FELTPAD magnetic rubber polishing pad (5/pkg)	**FP-8125-12-MAG**	5/pkg	160.00
CMP Polishing			
12-inch Black CHEM 2 magnetic rubber polishing pad (5/pkg)	**BC2-8012-MAG**	5/pkg	210.00

12-inch Polishing Pads with Magnetic Stainless Steel-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
12-inch CERMESH magnetic stainless steel metal mesh cloth (5/pkg)	**CMESH-2012-SSMAG**	5/pkg	265.00
12-inch POLYPAD magnetic stainless steel polishing pad (5/pkg)	**PP-6012-SSMAG**	5/pkg	165.00
Intermediate Diamond Polishing			
12-inch TEXPAN magnetic stainless steel polishing pad (5/pkg)	**TP-5012-SSMAG**	5/pkg	142.00
12-inch DACRON II ® magnetic stainless steel polishing pad (5/pkg)	**DC2-3012-SSMAG**	5/pkg	210.00
12-inch NYPAD magnetic stainless steel polishing pad (5/pkg)	**NY-3012-SSMAG**	5/pkg	155.00
12-inch GOLDPAD magnetic stainless steel polishing pad (5/pkg)	**GP-4012-SSMAG**	5/pkg	122.00
12-inch ATLANTIS magnetic stainless steel polishing pad (5/pkg)	**ATL-3012-SSMAG**	5/pkg	145.00
Final Polishing			
12-inch TRICOTE magnetic stainless steel polishing pad (5/pkg)	**TRI-4012-SSMAG**	5/pkg	155.00
12-inch MICROPAD magnetic stainless steel polishing pad (5/pkg)	**MP-9012-SSMAG**	5/pkg	122.00
12-inch NAPPAD magnetic stainless steel polishing pad (5/pkg)	**NP-7012-SSMAG**	5/pkg	125.00
12-inch MOLTEC 2 magnetic stainless steel polishing pad (5/pkg)	**MT2-7012-SSMAG**	5/pkg	150.00
12-inch FELTPAD magnetic stainless steel polishing pad (5/pkg)	**FP-8125-12-SSMAG**	5/pkg	145.00
CMP Polishing			
12-inch Black CHEM 2 magnetic stainless steel polishing pad (5/pkg)	**BC2-8012-SSMAG**	5/pkg	235.00



AlN substrate with a molybdenum/ nickel, gold coating, 400X (DIC)



Zinc-Aluminum Alloy, 1000X DIC (etchant CrO3, Na2SO4)

METALLOGRAPHIC POLISHING PADS (14-inch)

14-inch Polishing Pads with PSA Adhesive-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
14-inch CERMESH metal mesh cloth (5/pkg)	**CMESH-2014**	5/pkg	299.00
14-inch POLYPAD polishing pad (10/pkg)	**PP-6014**	10/pkg	175.00
Intermediate Diamond Polishing			
14-inch TEXPAN polishing pad (10/pkg)	**TP-5014**	10/pkg	185.00
14-inch DACRON II ® polishing pad (5/pkg)	**DC2-3014**	5/pkg	240.00
14-inch NYPAD polishing pad (10/pkg)	**NY-3014**	10/pkg	195.00
14-inch GOLDPAD polishing pad (10/pkg)	**GP-4014**	10/pkg	195.00
14-inch ATLANTIS polishing pad (5/pkg)	**ATL-3014**	5/pkg	135.00
Final Polishing			
14-inch TRICOTE polishing pad (10/pkg)	**TRI-4014**	10/pkg	175.00
14-inch MICROPAD polishing pad (10/pkg)	**MP-9014**	10/pkg	135.00
14-inch NAPPAD polishing pad (10/pkg)	**NP-7014**	10/pkg	185.00
14-inch MOLTEC 2 polishing pad (5/pkg)	**MT2-7014**	5/pkg	145.00
14-inch FELTPAD polishing pad (5/pkg)	**FP-8125-14**	5/pkg	150.00
CMP Polishing			
14-inch Black CHEM 2 polishing pad (10/pkg)	**BC2-8014**	10/pkg	305.00

12-inch MICROPAD
Catalog no. MP-9012

12-inch FELTPAD
Catalog no. FP-8125-12

14-inch Polishing Pads with Magnetic Rubber-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
14-inch CERMESH magnetic rubber metal mesh cloth (5/pkg)	**CMESH-2014-MAG**	5/pkg	360.00
14-inch POLYPAD magnetic rubber polishing pad (5/pkg)	**PP-6014-MAG**	5/pkg	175.00
Intermediate Diamond Polishing			
14-inch TEXPAN magnetic rubber polishing pad (5/pkg)	**TP-5014-MAG**	5/pkg	175.00
14-inch DACRON II ® magnetic rubber polishing pad (5/pkg)	**DC2-3014-MAG**	5/pkg	305.00
14-inch NYPAD magnetic rubber polishing pad (5/pkg)	**NY-3014-MAG**	5/pkg	195.00
14-inch GOLDPAD magnetic rubber polishing pad (5/pkg)	**GP-4014-MAG**	5/pkg	175.00
14-inch ATLANTIS magnetic rubber polishing pad (5/pkg)	**ATL-3014-MAG**	5/pkg	185.00
Final Polishing			
14-inch TRICOTE magnetic rubber polishing pad (5/pkg)	**TRI-4014-MAG**	5/pkg	205.00
14-inch MICROPAD magnetic rubber polishing pad (5/pkg)	**MP-9014-MAG**	5/pkg	165.00
14-inch NAPPAD magnetic rubber polishing pad (5/pkg)	**NP-7014-MAG**	5/pkg	180.00
14-inch MOLTEC 2 magnetic rubber polishing pad (5/pkg)	**MT2-7014-MAG**	5/pkg	195.00
14-inch FELTPAD magnetic rubber polishing pad (5/pkg)	**FP-8125-14-MAG**	5/pkg	195.00
CMP Polishing			
14-inch Black CHEM 2 magnetic rubber polishing pad (5/pkg)	**BC2-8014-MAG**	5/pkg	320.00

14-inch Polishing Pads with Magnetic Stainless Steel-Backing

PACE Product Name	Catalog Number	Qty	Price ($)
Rough Polishing			
14-inch CERMESH magnetic stainless steel metal mesh cloth (5/pkg)	**CMESH-2014-SSMAG**	5/pkg	370.00
14-inch POLYPAD magnetic stainless steel polishing pad (5/pkg)	**PP-6014-SSMAG**	5/pkg	225.00
Intermediate Diamond Polishing			
14-inch TEXPAN magnetic stainless steel polishing pad (5/pkg)	**TP-5014-SSMAG**	5/pkg	205.00
14-inch DACRON II ® magnetic stainless steel polishing pad (5/pkg)	**DC2-3014-SSMAG**	5/pkg	305.00
14-inch NYPAD magnetic stainless steel polishing pad (5/pkg)	**NY-3014-SSMAG**	5/pkg	205.00
14-inch GOLDPAD magnetic stainless steel polishing pad (5/pkg)	**GP-4014-SSMAG**	5/pkg	175.00
14-inch ATLANTIS magnetic stainless steel polishing pad (5/pkg)	**ATL-3014-SSMAG**	5/pkg	185.00
Final Polishing			
14-inch TRICOTE magnetic stainless steel polishing pad (5/pkg)	**TRI-4014-SSMAG**	5/pkg	215.00
14-inch MICROPAD magnetic stainless steel polishing pad (5/pkg)	**MP-9014-SSMAG**	5/pkg	170.00
14-inch NAPPAD magnetic stainless steel polishing pad (5/pkg)	**NP-7014-SSMAG**	5/pkg	170.00
14-inch MOLTEC 2 magnetic stainless steel polishing pad (5/pkg)	**MT2-7014-SSMAG**	5/pkg	205.00
14-inch FELTPAD magnetic stainless steel polishing pad (5/pkg)	**FP-8125-14-SSMAG**	5/pkg	205.00
CMP Polishing			
14-inch Black CHEM 2 magnetic stainless steel polishing pad (5/pkg)	**BC2-8014-SSMAG**	5/pkg	305.00

Magnetic Base Disks and Plates

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch MAGNETON Base Plate (PSA)	**MAG-B08**	each	52.00
10-inch MAGNETON Base Plate (PSA)	**MAG-B10**	each	58.00
12-inch MAGNETON Base Plate (PSA)	**MAG-B12**	each	65.00
14-inch MAGNETON Base Plate (PSA)	**MAG-B14**	each	85.00

MAGNETON Base Plate

MAGNEPAD Stainless Steel Base Plate

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P08**	each	58.00
10-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P10**	each	62.00
12-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P12**	each	68.00
14-inch MAGNEPAD Stainless Steel Magnetic Base Plate	**SSMAG-P14**	each	95.00

PACE Product Name	Catalog Number	Qty	Price ($)
8-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P08**	each	60.00
10-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P10**	each	65.00
12-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P12**	each	80.00
14-inch MAGNEPAD Teflon Coated Magnetic Base Plate	**MAG-P14**	each	120.00

MAGNEPAD Coated Base Plate

DIAMOND POLISHING

Diamond Polishing:

The majority of specimens will use at least one, if not multiple, diamond polishing steps. For metallographic specimen preparation either a man-made synthetic polycrystalline diamond or a monocrystalline diamond is used and the diamond is either mixed into a suspending solution or is used in a paste form. For metallography, diamond is coded by the following color scheme:

0.10 micron | 0.25 micron | 0.5 micron | 1 micron | 3 micron | 6 micron | 9 micron | 15 micron | 30 micron | 45 micron

Polycrystalline Diamond:

Diamond is the hardest known material (Mohs 10, 8000 HV). It has a cubic crystal structure and is available in either natural or an artificial product. For metallographic applications, both monocrystalline and polycrystalline diamond can be used, however, polycrystalline diamond has a number of advantages over monocrystalline diamond, especially for the finer particle sizes.

Polycrystalline Diamond

Monocrystalline Diamond

Polycrystalline Diamond Advantages:

- Higher cut rates (self-sharpening abrasive)
- Uniform surface finish
- More uniform particle size distribution
- Harder / tougher particles
- Blocky shaped cutting edges
- Higher surface area (300% greater than monocrystalline diamond)
- Hexagonal microcrystallites (equally hard in all directions)

Polycrystalline Diamond Suspensions (1-liter Color Coded)

PACE Product Name	Catalog Number	Qty	Price ($)
1 micron (blue) DIAMAT PC diamond (1 liter)	**PC-1001-1L**	1-liter	195.00
3 micron (green) DIAMAT PC diamond (1 liter)	**PC-1003-1L**	1-liter	215.00
6 micron (yellow) DIAMAT PC diamond (1 liter)	**PC-1006-1L**	1-liter	220.00
9 micron (red) DIAMAT PC diamond (1 liter)	**PC-1009-1L**	1-liter	220.00
15 micron (brown) DIAMAT PC diamond (1 liter)	**PC-1015-1L**	1-liter	225.00
30 micron (orange) DIAMAT PC diamond (1 liter)	**PC-1030-1L**	1-liter	245.00
45 micron (purple) DIAMAT PC diamond (1 liter)	**PC-1045-1L**	1-liter	245.00

1 liter Dyed PC Diamond

Polycrystalline Diamond Suspensions (1-gallon Color Coded)

PACE Product Name	Catalog Number	Qty	Price ($)
1 micron (blue) DIAMAT PC diamond (1 gallon)	**PC-1001-1GLB**	1-gallon	525.00
3 micron (green) DIAMAT PC diamond (1 gallon)	**PC-1003-1GLG**	1-gallon	540.00
6 micron (yellow) DIAMAT PC diamond (1 gallon)	**PC-1006-1GLY**	1-gallon	545.00
9 micron (red) DIAMAT PC diamond (1 gallon)	**PC-1009-1GLR**	1-gallon	545.00
15 micron (brown) DIAMAT PC diamond (1 gallon)	**PC-1015-1GLBR**	1-gallon	560.00
30 micron (orange) DIAMAT PC diamond (1 gallon)	**PC-1030-1GLO**	1-gallon	560.00
45 micron (purple) DIAMAT PC diamond (1 gallon)	**PC-1045-1GLP**	1-gallon	560.00

1 gallon Dyed PC Diamond

POLYCRYSTALLINE DIAMOND (HIGH VISCOSITY)

High Viscosity Polycrystalline Diamond Suspensions

0.05 micron High Viscosity Polycrystalline Diamond

0.25 micron High Viscosity Polycrystalline Diamond

1 micron High Viscosity Polycrystalline Diamond

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-0105-250**	250 ml	58.00
0.05 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-0105-500**	500 ml	97.00
0.05 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-0105-1GL**	1 gallon	525.00
0.05 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-0105-5L**	5 liter	850.00
0.10 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-0110-250**	250 ml	58.00
0.10 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-0110-500**	500 ml	97.00
0.10 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-0110-1GL**	1 gallon	525.00
0.10 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-0110-5L**	5 liter	850.00
0.25 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-0125-250**	250 ml	58.00
0.25 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-0125-500**	500 ml	97.00
0.25 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-0125-1GL**	1 gallon	525.00
0.25 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-0125-5L**	5 liter	850.00
0.50 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-0150-250**	250 ml	58.00
0.50 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-0150-500**	500 ml	97.00
0.50 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-0150-1GL**	1 gallon	525.00
0.50 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-0150-5L**	5 liter	850.00
1 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1001-250**	250 ml	58.00
1 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1001-500**	500 ml	97.00
1 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1001-1GL**	1 gallon	525.00
1 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1001-5L**	5 liter	850.00
3 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1003-250**	250 ml	64.00
3 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1003-500**	500 ml	115.00
3 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1003-1GL**	1 gallon	535.00
3 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1003-5L**	5 liter	995.00
6 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1006-250**	250 ml	72.00
6 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1006-500**	500 ml	125.00
6 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1006-1GL**	1 gallon	545.00
6 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1006-5L**	5 liter	1050.00

High Viscosity Polycrystalline Diamond Suspensions

PACE Product Name	Catalog Number	Qty	Price ($)
9 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1009-250**	250 ml	72.00
9 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1009-500**	500 ml	125.00
9 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1009-1GL**	1 gallon	545.00
9 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1009-5L**	5 liter	1050.00
15 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1015-250**	250 ml	72.00
15 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1015-500**	500 ml	125.00
15 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1015-1GL**	1 gallon	545.00
15 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1015-5L**	5 liter	1200.00
30 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1030-250**	250 ml	85.00
30 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1030-500**	500 ml	142.00
30 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1030-1GL**	1 gallon	565.00
30 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1030-5L**	5 liter	1200.00
45 micron high viscosity DIAMAT PC diamond (250 ml)	**PC-1045-250**	250 ml	85.00
45 micron high viscosity DIAMAT PC diamond (500 ml)	**PC-1045-500**	500 ml	142.00
45 micron high viscosity DIAMAT PC diamond (1 gallon)	**PC-1045-1GL**	1 gallon	565.00
45 micron high viscosity DIAMAT PC diamond (5 liters)	**PC-1045-5L**	5 liter	1200.00

9 micron High Viscosity Polycrystalline Diamond

45 micron High Viscosity Polycrystalline Diamond

ZETA 2000S Diamond Dispenser

- 4 (24v) dedicated, programmable peristaltic pumps
- Setting adjustments for frequency, duration, start time, total time
- 7-inch touchscreen interface
- Compatible with NANO polishing machines as well as competitors' polishing devices
- Controlled priming for each pump and dispensing lines for more immediate application of the abrasive / lubricant
- Flow 1.2~90 ml/minute
- Flex line for easy adjustment

Polycrystalline Diamond Paste (5 gram syringes)

5 gram PC Diamond Paste

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron polycrystalline diamond paste (5 grams)	**PC-0210-05**	5 grams	42.00
0.25 micron polycrystalline diamond paste (5 grams)	**PC-0225-05**	5 grams	42.00
0.50 micron polycrystalline diamond paste (5 grams)	**PC-0250-05**	5 grams	42.00
1 micron polycrystalline diamond paste (5 grams)	**PC-2001-05**	5 grams	44.00
3 micron polycrystalline diamond paste (5 grams)	**PC-2003-05**	5 grams	64.00
6 micron polycrystalline diamond paste (5 grams)	**PC-2006-05**	5 grams	64.00
9 micron polycrystalline diamond paste (5 grams)	**PC-2009-05**	5 grams	64.00
15 micron polycrystalline diamond paste (5 grams)	**PC-2015-05**	5 grams	72.00
30 micron polycrystalline diamond paste (5 grams)	**PC-2030-05**	5 grams	72.00
45 micron polycrystalline diamond paste (5 grams)	**PC-2045-05**	5 grams	72.00

Polycrystalline Diamond Paste (20 gram syringes)

20 gram PC Diamond Paste

PACE Product Name	Catalog Number	Qty	Price ($)
0.10 micron polycrystalline diamond paste (20 grams)	**PC-0210-20**	20 grams	102.00
0.25 micron polycrystalline diamond paste (20 grams)	**PC-0225-20**	20 grams	102.00
0.50 micron polycrystalline diamond paste (20 grams)	**PC-0250-20**	20 grams	102.00
1 micron polycrystalline diamond paste (20 grams)	**PC-2001-20**	20 grams	125.00
3 micron polycrystalline diamond paste (20 grams)	**PC-2003-20**	20 grams	205.00
6 micron polycrystalline diamond paste (20 grams)	**PC-2006-20**	20 grams	205.00
9 micron polycrystalline diamond paste (20 grams)	**PC-2009-20**	20 grams	205.00
15 micron polycrystalline diamond paste (20 grams)	**PC-2015-20**	20 grams	220.00
30 micron polycrystalline diamond paste (20 grams)	**PC-2030-20**	20 grams	220.00
45 micron polycrystalline diamond paste (20 grams)	**PC-2045-20**	20 grams	220.00

Diamond Polishing Pastes:

Diamond pastes have been and continue to be commonly used for hand or manual polishing steps because they are easy to apply and the diamond can be better charged or fixed into the polishing pad as compared to diamond suspensions. They are less commonly used on automated polishing machines because diamond suspensions are easier to apply and they also have a built-in lubricant. The use of diamond pastes requires the application of an additional diamond extender or lubricant, which is typically a glycol or alcohol based solution.

POLYCRYSTALLINE DIAMOND (LOW VISCOSITY)

Polycrystalline Diamond Suspensions (Low Viscosity)

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-0105-250**	250 ml	58.00
0.05 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-0105-500**	500 ml	97.00
0.05 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-0105-1GL**	1 gallon	525.00
0.05 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-0105-5L**	5 liter	850.00
0.10 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-0110-250**	250 ml	58.00
0.10 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-0110-500**	500 ml	97.00
0.10 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-0110-1GL**	1 gallon	525.00
0.10 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-0110-5L**	5 liter	850.00
0.25 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-0125-250**	250 ml	58.00
0.25 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-0125-500**	500 ml	97.00
0.25 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-0125-1GL**	1 gallon	525.00
0.25 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-0125-5L**	5 liter	850.00
0.50 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-0150-250**	250 ml	58.00
0.50 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-0150-500**	500 ml	97.00
0.50 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-0150-1GL**	1 gallon	525.00
0.50 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-0150-5L**	5 liter	850.00
1 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1001-250**	250 ml	58.00
1 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1001-500**	500 ml	97.00
1 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1001-1GL**	1 gallon	525.00
1 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1001-5L**	5 liter	850.00
3 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1003-250**	250 ml	64.00
3 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1003-500**	500 ml	115.00
3 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1003-1GL**	1 gallon	535.00
3 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1003-5L**	5 liter	995.00
6 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1006-250**	250 ml	72.00
6 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1006-500**	500 ml	125.00
6 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1006-1GL**	1 gallon	545.00
6 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1006-5L**	5 liter	1050.00

0.10 micron Low Viscosity Polycrystalline Diamond

1 micron Low Viscosity Polycrystalline Diamond

3 micron Low Viscosity Polycrystalline Diamond

9 micron Low Viscosity Polycrystalline Diamond

30 micron Low Viscosity Polycrystalline Diamond

PACE Product Name	Catalog Number	Qty	Price ($)
9 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1009-250**	250 ml	72.00
9 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1009-500**	500 ml	125.00
9 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1009-1GL**	1 gallon	545.00
9 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1009-5L**	5 liter	1050.00
15 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1015-250**	250 ml	72.00
15 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1015-500**	500 ml	125.00
15 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1015-1GL**	1 gallon	545.00
15 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1015-5L**	5 liter	1050.00
30 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1030-250**	250 ml	85.00
30 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1030-500**	500 ml	142.00
30 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1030-1GL**	1 gallon	565.00
30 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1030-5L**	5 liter	1200.00
45 micron low viscosity DIAMAT PC diamond (250 ml)	**GPC-1045-250**	250 ml	85.00
45 micron low viscosity DIAMAT PC diamond (500 ml)	**GPC-1045-500**	500 ml	142.00
45 micron low viscosity DIAMAT PC diamond (1 gallon)	**GPC-1045-1GL**	1 gallon	565.00
45 micron low viscosity DIAMAT PC diamond (5 liters)	**GPC-1045-5L**	5 liter	1200.00

Polishing Pad Applications

- Rough Polishing: Coarse polishing with 15-45 micron abrasives
  -CERMESH Metal Mesh cloth,POLYPAD Pad
- Intermediate Polishing: For removing most surface damage with 1-9 micron abrasives
  -TEXPAN Pad, DACRON II Pad, NYPAD Pad, GOLDPAD Pad, ATLANTIS Pad (most popular)
- Final Polishing: For removing subsurface damage with 0.05-1 micron abrasives
  -TRICOTE Pad, MICROPAD (most popular), NAPPAD Pad, MOLTEC 2 Pad, FELTPAD Pad
- CMP Polishing: CMP (chemical mechanical polishing with colloidal silica abrasives
  -BLACK CHEM 2

Monocrystalline Diamond Suspensions (High Viscosity)

PACE Product Name	Catalog Number	Qty	Price ($)
1 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1001-250**	250 ml	33.00
1 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1001-500**	500 ml	64.00
1 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1001-1GL**	1 gallon	342.00
1 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1001-5L**	5 liter	550.00
3 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1003-250**	250 ml	37.50
3 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1003-500**	500 ml	75.00
3 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1003-1GL**	1 gallon	360.00
3 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1003-5L**	5 liter	595.00
6 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1006-250**	250 ml	42.00
6 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1006-500**	500 ml	80.00
6 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1006-1GL**	1 gallon	375.00
6 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1006-5L**	5 liter	625.00
9 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1009-250**	250 ml	42.00
9 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1009-500**	500 ml	80.00
9 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1009-1GL**	1 gallon	375.00
9 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1009-5L**	5 liter	625.00
15 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1015-250**	250 ml	42.00
15 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1015-500**	500 ml	80.00
15 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1015-1GL**	1 gallon	385.00
15 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1015-5L**	5 liter	625.00
30 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1030-250**	250 ml	48.00
30 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1030-500**	500 ml	88.00
30 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1030-1GL**	1 gallon	385.00
30 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1030-5L**	5 liter	675.00
45 micron high viscosity DIAMAT MA diamond (250 ml)	**MA-1045-250**	250 ml	48.00
45 micron high viscosity DIAMAT MA diamond (500 ml)	**MA-1045-500**	500 ml	88.00
45 micron high viscosity DIAMAT MA diamond (1 gallon)	**MA-1045-1GL**	1 gallon	385.00
45 micron high viscosity DIAMAT MA diamond (5 liters)	**MA-1045-5L**	5 liter	675.00

1 micron High Viscosity Monocrystalline Diamond

3 micron High Viscosity Monocrystalline Diamond

6 micron High Viscosity Monocrystalline Diamond

MONOCRYSTALLINE DIAMOND (PASTES)

Monocrystalline Diamond Paste (5 gram syringes)

5 gram Monocrystalline Diamond Paste

PACE Product Name	Catalog Number	Qty	Price ($)
0.25 micron monocrystalline diamond paste (5 grams)	**MA-0225-05**	5 grams	18.00
0.50 micron monocrystalline diamond paste (5 grams)	**MA-0250-05**	5 grams	18.00
1 micron monocrystalline diamond paste (5 grams)	**MA-2001-05**	5 grams	18.00
3 micron monocrystalline diamond paste (5 grams)	**MA-2003-05**	5 grams	22.00
6 micron monocrystalline diamond paste (5 grams)	**MA-2006-05**	5 grams	22.00
9 micron monocrystalline diamond paste (5 grams)	**MA-2009-05**	5 grams	22.00
15 micron monocrystalline diamond paste (5 grams)	**MA-2015-05**	5 grams	24.00
30 micron monocrystalline diamond paste (5 grams)	**MA-2030-05**	5 grams	24.00
45 micron monocrystalline diamond paste (5 grams)	**MA-2045-05**	5 grams	24.00

Monocrystalline Diamond Paste (20 gram syringes)

20 gram Monocrystalline Diamond Paste

PACE Product Name	Catalog Number	Qty	Price ($)
0.25 micron monocrystalline diamond paste (20 grams)	**MA-0225-20**	20 grams	55.00
0.50 micron monocrystalline diamond paste (20 grams)	**MA-0250-20**	20 grams	55.00
1 micron monocrystalline diamond paste (20 grams)	**MA-2001-20**	20 grams	55.00
3 micron monocrystalline diamond paste (20 grams)	**MA-2003-20**	20 grams	64.00
6 micron monocrystalline diamond paste (20 grams)	**MA-2006-20**	20 grams	64.00
9 micron monocrystalline diamond paste (20 grams)	**MA-2009-20**	20 grams	64.00
15 micron monocrystalline diamond paste (20 grams)	**MA-2015-20**	20 grams	70.00
30 micron monocrystalline diamond paste (20 grams)	**MA-2030-20**	20 grams	70.00
45 micron monocrystalline diamond paste (20 grams)	**MA-2045-20**	20 grams	70.00

Monocrystalline Diamond Suspensions (Low Viscosity)

PACE Product Name	Catalog Number	Qty	Price ($)
1 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1001-250**	250 ml	33.00
1 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1001-500**	500 ml	64.00
1 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1001-1GL**	1 gallon	342.00
1 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1001-5L**	5 liter	550.00
3 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1003-250**	250 ml	37.50
3 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1003-500**	500 ml	75.00
3 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1003-1GL**	1 gallon	360.00
3 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1003-5L**	5 liter	725.00
6 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1006-250**	250 ml	42.00
6 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1006-500**	500 ml	80.00
6 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1006-1GL**	1 gallon	375.00
6 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1006-5L**	5 liter	625.00
9 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1009-250**	250 ml	42.00
9 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1009-500**	500 ml	80.00
9 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1009-1GL**	1 gallon	375.00
9 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1009-5L**	5 liter	625.00
15 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1015-250**	250 ml	42.00
15 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1015-500**	500 ml	80.00
15 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1015-1GL**	1 gallon	385.00
15 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1015-5L**	5 liter	625.00
30 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1030-250**	250 ml	48.00
30 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1030-500**	500 ml	88.00
30 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1030-1GL**	1 gallon	385.00
30 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1030-5L**	5 liter	675.00
45 micron low viscosity DIAMAT MA diamond (250 ml)	**GMA-1045-250**	250 ml	48.00
45 micron low viscosity DIAMAT MA diamond (500 ml)	**GMA-1045-500**	500 ml	88.00
45 micron low viscosity DIAMAT MA diamond (1 gallon)	**GMA-1045-1GL**	1 gallon	385.00
45 micron low viscosity DIAMAT MA diamond (5 liters)	**GMA-1045-5L**	5 liter	675.00

15 micron Low Viscosity Monocrystalline Diamond

30 micron Low Viscosity Monocrystalline Diamond

45 micron Low Viscosity Monocrystalline Diamond

DIAMOND EXTENDERS / LUBRICANTS

Extenders / Lubricants:

Diamond lubricants or extenders are required for diamond pastes; however, they are also useful for thinning diamond suspensions. By alternating between the diamond suspension and the extender the diamond can better fall out of suspension and therefore embed into the polishing pad surface. Extenders / lubricants are typically glycol or alcohol based products.

Diamond Extenders / Lubricants

PACE Product Name	Catalog Number	Qty	Price ($)
DIALUBE water based lube (16 oz)	**DL-3000-16**	16 oz	12.50
DIALUBE water based lube (32 oz)	**DL-3000-32**	32 oz	24.00
DIALUBE water based lube (1/2 gallon)	**DL-3000-64**	1/2 gallon	45.00
DIALUBE water based lube (1 gallon)	**DL-3000-128**	1 gallon	80.00
DIALUBE Blue alcohol based lube (32 oz)*	**AOD-3000-32**	32 oz	19.00
DIALUBE Blue alcohol based lube (1 gallon)*	**AOD-3000-128**	1 gallon	65.00
DIALUBE Blue alcohol based lube (5 gallons)*	**AOD-3000-640**	5 gallons	295.00
DIALUBE Purple alcohol based lube (32 oz)*	**ADL-3000-32**	32 oz	19.50
DIALUBE Purple alcohol based lube (1 gallon)*	**ADL-3000-128**	1 gallon	65.00
DIALUBE Purple alcohol based lube (5 gallons)*	**ADL-3000-640**	5 gallons	295.00
POLYLUBE non-aqueous lube (32 oz)	**PDL-3000-32**	32 oz	19.50
POLYLUBE non-aqueous lube (1 gallon)	**PDL-3000-128**	1 gallon	65.00
POLYLUBE Red (anti-corrosion lube) (32 oz)	**PDL-3000R-32**	32 oz	19.50
POLYLUBE Red (anti-corrosion lube) (1 gallon)	**PDL-3000R-128**	1 gallon	65.00

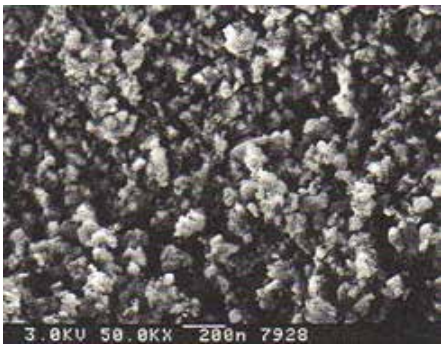
*** May required dangerous goods shipping, extra charges may apply**

Final Polishing:

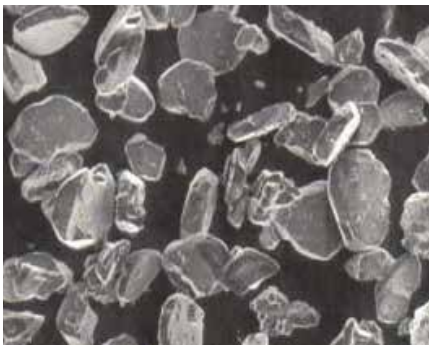
Final polishing can be accomplished with alumina, diamond, colloidal silica, ceria (cerium oxide) and rouge (iron oxide). However, the most commonly used abrasive for final polishing metals is alumina. Alumina abrasives are classified as calcined, levigated or polycrystalline based on their manufacturing process, crystal structure (hardness) and their sizing process.

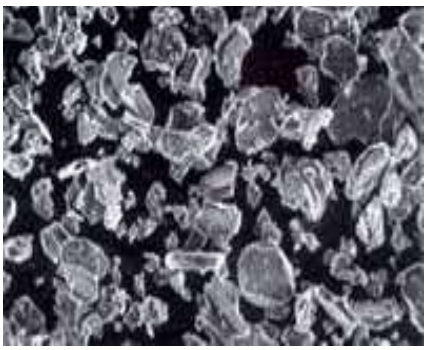
Characteristics of Alumina Abrasives

PROPERTY	POLYCRYSTALLINE	CALCINED	LEVIGATED
Crystal structure	Polycrystalline alpha alumina	Monocrystalline alpha alumina	Monocrystalline gamma or alpha alumina
Shape	Rough spherical particles	Hexagonal platelets	Hexagonal platelets
Particle size	0.05-0.25 microns	0.5-15 microns	<1 micron
Specific gravity	3.95 gm/cc	3.95 gm/cc	3.95 gm/cc
Hardness	Knoop 2000 (Mohs 9)	Knoop 2000 (Mohs 9)	Mohs 8-9
Applications	Available in a slurry at either a pH 4 or pH 10, primarily for metal polishing	Available in powders, slurries or suspensions, rough polishing	More commonly known as Linde A (0.3 micron) Linde B (0.05 micron) Linde C (1 micron)



Polycrystalline Alumina


Calcined Alumina


Levigated Alumina

NANOMETER Polycrystalline Alumina

Low Viscosity Alumina Slurry

Deagglomerated Alumina Powder

POLYCRYSTALLINE ALUMINA

Polycrystalline Alumina:

Polycrystalline or nanometer alumina is a colloidal alumina manufactured by a proprietary process. Polycrystalline abrasives are milled at either a low or higher pH value in order to avoid agglomeration which occurs near the point of zero charge (PZC). For alumina the PZC is around pH 7. This processing offers two significant improvements over conventional calcined alumina processes:

- Tighter, more controlled particle size distributions
- Harder alpha alumina crystal structure

A tighter, more controlled particle size distribution is the result of less particle aggregation. For example, standard calcined 0.05 micron gamma alumina products form aggregate sizes as large as 5 microns. In some cases, these aggregates can be broken down during polishing with harder specimens; however, they are a problem when polishing softer metals (such as aluminum, tin, lead, copper and soft steels) with calcined alumina abrasives.

Nanometer polycrystalline alumina is specifically milled to produce a much smaller aggregate particle size distribution (<0.5 micron)(see PSD charts). Polycrystalline alumina is also a harder alpha alumina particle, therefore making it a more efficient cutting abrasive. Thus, polycrystalline alumina is a much more controlled polishing abrasive as compared to calcined gamma alumina abrasives.

In general, the more modern polycrystalline alumina abrasives outperform traditional calcined and levigated alumina abrasives for final polishing because they produce a much more consistent and better surface finish.

Particle size distribution for 0.05 micron NANOMETER Alumina

Particle size distribution for 0.05 micron Deagglomerated Alumina

Benefits of Polycrystalline Alumina:

- Improved surface finishes over gamma alumina
- Less random scratching
- Higher cutting rates than gamma alumina
- More uniform surface finish
- Tighter particle size distributions than gamma alumina
- Low viscosity for easier dispensing
- Semi-permanent suspensions

NANOMETER 0.05 micron Polycrystalline Alpha Alumina Slurries

PACE Product Name	Catalog Number	Qty	Price ($)
16 oz Nanometer alumina (pH 10)	**NA-1005-16**	16 oz	45.00
32 oz Nanometer alumina (pH 10)	**NA-1005-32**	32 oz	76.00
1/2 gallon Nanometer alumina (pH 10)	**NA-1005-64**	1/2 gallon	135.00
1 gallon Nanometer alumina (pH 10)	**NA-1005-128**	1 gallon	225.00
16 oz Acidic Nanometer alumina (pH 4)	**NA-1020-16**	16 oz	52.50
32 oz Acidic Nanometer alumina (pH 4)	**NA-1020-32**	32 oz	90.00
1/2 gallon Acidic Nanometer alumina (pH 4)	**NA-1020-64**	1/2 gallon	145.00
1 gallon Acidic Nanometer alumina (pH 4)	**NA-1020-128**	1 gallon	265.00

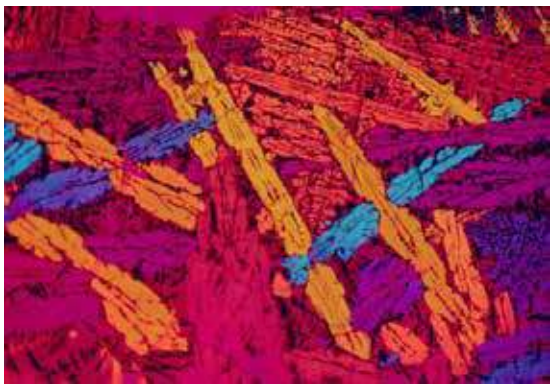
Alumina Suspensions (For Electronics and Soft Materials - High Viscosity)

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron Electronics Grade Deagglomerated Alumina (6 oz)	**NANO2-1005-06E**	6 oz	58.00
0.05 micron Electronics Grade Deagglomerated Alumina (16 oz)	**NANO2-1005-16E**	16 oz	135.00
0.05 micron Electronics Grade Deagglomerated Alumina (32 oz)	**NANO2-1005-32E**	32 oz	245.00
0.05 micron Electronics Grade Deagglomerated Alumina (1 gallon)	**NANO2-1005-128E**	1 gallon	905.00
0.3 micron Electronics Grade Deagglomerated Alumina (6 oz)	**NANO2-1003-06E**	6 oz	58.00
0.3 micron Electronics Grade Deagglomerated Alumina (16 oz)	**NANO2-1003-16E**	16 oz	135.00
0.3 micron Electronics Grade Deagglomerated Alumina (32 oz)	**NANO2-1003-32E**	32 oz	245.00
0.3 micron Electronics Grade Deagglomerated Alumina (1 gallon)	**NANO2-1003-128E**	1 gallon	905.00
1 micron Electronics Grade Deagglomerated Alumina (6 oz)	**NANO2-1010-06E**	6 oz	58.00
1 micron Electronics Grade Deagglomerated Alumina (16 oz)	**NANO2-1010-16E**	16 oz	135.00
1 micron Electronics Grade Deagglomerated Alumina (32 oz)	**NANO2-1010-32E**	32 oz	245.00
1 micron Electronics Grade Deagglomerated Alumina (1 gallon)	**NANO2-1010-128E**	1 gallon	905.00

Deagglomerated NANO2 Alumina Suspensions

Alumina Suspensions for Electronics and Soft Materials:

- Double deagglomerated processing
- Less random scratching
- More uniform surface finish
- Tighter particle size distributions
- High viscosity for manual dispensing
- Semi-permanent suspensions



Slag, 100X (Polarized light), as polished condition

Low Viscosity Alumina Suspensions:

- Low viscosity for easier dispensing
- Basic alumina polishing suspension ranging from 0.05 micron to 5 micron sizes
- Reasonably priced
- Traditional polishing compounds

Low Viscosity NANO Alumina Suspensions

Alumina Slurries (NANO Low Viscosity)

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron Alumina Low Viscosity Polishing Suspension (6 oz)	**NANO-1005-06**	6 oz	25.00
0.05 micron Alumina Low Viscosity Polishing Suspension (16 oz)	**NANO-1005-16**	16 oz	55.00
0.05 micron Alumina Low Viscosity Polishing Suspension (32 oz)	**NANO-1005-32**	32 oz	102.00
0.05 micron Alumina Low Viscosity Polishing Suspension (1 gallon)	**NANO-1005-128**	1 gallon	215.00
0.3 micron Alumina Low Viscosity Polishing Suspension (6 oz)	**NANO-1003-06**	6 oz	25.00
0.3 micron Alumina Low Viscosity Polishing Suspension (16 oz)	**NANO-1003-16**	16 oz	55.00
0.3 micron Alumina Low Viscosity Polishing Suspension (32 oz)	**NANO-1003-32**	32 oz	102.00
0.3 micron Alumina Low Viscosity Polishing Suspension (1 gallon)	**NANO-1003-128**	1 gallon	215.00
0.50 micron Alumina Low Viscosity Polishing Suspension (6 oz)	**NANO-1105-06**	6 oz	25.00
0.50 micron Alumina Low Viscosity Polishing Suspension (16 oz)	**NANO-1105-16**	16 oz	55.00
0.50 micron Alumina Low Viscosity Polishing Suspension (32 oz)	**NANO-1105-32**	32 oz	102.00
0.50 micron Alumina Low Viscosity Polishing Suspension (1 gallon)	**NANO-1105-128**	1 gallon	215.00
1 micron Alumina Low Viscosity Polishing Suspension (6 oz)	**NANO-1010-06**	6 oz	25.00
1 micron Alumina Low Viscosity Polishing Suspension (16 oz)	**NANO-1010-16**	16 oz	55.00
1 micron Alumina Low Viscosity Polishing Suspension (32 oz)	**NANO-1010-32**	32 oz	102.00
1 micron Alumina Low Viscosity Polishing Suspension (1 gallon)	**NANO-1010-128**	1 gallon	215.00
3 micron Alumina Low Viscosity Polishing Suspension (6 oz)	**NANO-1030-06**	6 oz	25.00
3 micron Alumina Low Viscosity Polishing Suspension (16 oz)	**NANO-1030-16**	16 oz	55.00
3 micron Alumina Low Viscosity Polishing Suspension (32 oz)	**NANO-1030-32**	32 oz	102.00
3 micron Alumina Low Viscosity Polishing Suspension (1 gallon)	**NANO-1030-128**	1 gallon	215.00
5 micron Alumina Low Viscosity Polishing Suspension (6 oz)	**NANO-1050-06**	6 oz	25.00
5 micron Alumina Low Viscosity Polishing Suspension (16 oz)	**NANO-1050-16**	16 oz	55.00
5 micron Alumina Low Viscosity Polishing Suspension (32 oz)	**NANO-1050-32**	32 oz	102.00
5 micron Alumina Low Viscosity Polishing Suspension (1 gallon)	**NANO-1050-128**	1 gallon	215.00

ALUMINA POWDERS

Deagglomerated Alumina Powders (For Electronics and Soft Materials)

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron electronics grade deagglomerated alumina powder (1 lb)	ALD-1005-01E (formerly ALR-1005-01E)	1 lb	205.00
0.05 micron electronics grade deagglomerated alumina powder (5 lbs)	ALD-1005-05E (formerly ALR-1005-05E)	5 lbs	945.00
0.3 micron electronics grade deagglomerated alumina powder (1 lb)	ALD-0103-01E (formerly ALR-0103-01E)	1 lb	205.00
0.3 micron electronics grade deagglomerated alumina powder (5 lbs)	ALD-0103-05E (formerly ALR-0103-05E)	5 lbs	945.00
1 micron electronics grade deagglomerated alumina powder (1 lb)	ALD-0110-01E (formerly ALR-0110-01E)	1 lb	205.00
1 micron electronics grade deagglomerated alumina powder (5 lbs)	ALD-0110-05E (formerly ALR-0110-05E)	5 lbs	945.00

Alumina Powders

PACE Product Name	Catalog Number	Qty	Price ($)
0.05 micron deagglomerated alumina powder (1 lb)	**ALD-1005-01 (formerly ALR-1005-01)**	1 lb	105.00
0.05 micron deagglomerated alumina powder (5 lbs)	**ALD-1005-05 (formerly ALR-1005-05)**	5 lbs	475.00
0.3 micron deagglomerated alumina powder (1 lb)	**ALD-0103-01 (formerly ALD-0103B-01)**	1 lb	92.50
0.3 micron deagglomerated alumina powder (5 lbs)	**ALD-0103-05 (formerly ALD-0103B-05)**	5 lbs	395.00
0.3 micron alumina powder (high density) (1 lb)	**ALR-0103-01**	1 lb	62.00
0.3 micron alumina powder (high density) (5 lbs)	**ALR-0103-05**	5 lbs	275.00
0.5 micron alumina powder (1 lb)	**ALR-0105-01**	1 lb	65.00
0.5 micron alumina powder (5 lbs)	**ALR-0105-05**	5 lbs	290.00
1 micron alumina powder (1 lb)	**ALR-0110-01**	1 lb	65.00
1 micron alumina powder (5 lbs)	**ALR-0110-05**	5 lbs	290.00
3 micron alumina powder (1 lb)	**ALR-0130-01**	1 lb	29.50
3 micron alumina powder (5 lbs)	**ALR-0130-05**	5 lbs	95.00
5 micron alumina powder (1 lb)	**ALR-0150-01**	1 lb	29.50
5 micron alumina powder (5 lbs)	**ALR-0150-05**	5 lbs	95.00
9 micron alumina powder (5 lbs)	**ALR-0190-05**	5 lbs	58.00
12 micron alumina powder (5 lbs)	**ALR-1200-05**	5 lbs	58.00
15 micron alumina powder (5 lbs)	**ALR-1500-05**	5 lbs	58.00
20 micron alumina powder (5 lbs)	**ALR-2000-05**	5 lbs	58.00
30 micron alumina powder (5 lbs)	**ALR-3000-05**	5 lbs	58.00
40 micron alumina powder (5 lbs)	**ALR-4000-05**	5 lbs	58.00

Deagglomerated Fine Alumina Powders

Calcined Colloidal (<1 micron) Powders

Calcined Fine Alumina Powders

Coarse Alumina Powders

CMP ABRASIVES

CMP Polishing Slurries:

CMP (Chemical-Mechanical Polishing) slurries are a combination of colloidal silica and polycrystalline alumina. The colloidal silica provides a chemical polishing action, whereas, the polycrystalline alumina provides a mechanical polishing action. CMP slurries, especially when used in conjunction with vibratory polishing produce flatter surface features and faster polishing rates.

CMP Polishing Slurries

CMP Slurry (Polycrystalline Alumina - Colloidal Silica Mixture)

PACE Product Name	Catalog Number	Qty	Price ($)
16 oz Chemical Mechanical Alumina-Silica Slurry - pH 10	**CMP-1005-16**	16 oz	36.00
32 oz Chemical Mechanical Alumina-Silica Slurry - pH 10	**CMP-1005-32**	32 oz	62.00
1/2 gallon Chemical Mechanical Alumina-Silica Slurry - pH 10	**CMP-1005-64**	1/2 gallon	105.00
1 gallon Chemical Mechanical Alumina-Silica Slurry - pH 10	**CMP-1005-128**	1 gallon	170.00

Colloidal Silica and CMP Polishing Procedures:

Colloidal silica polishing can be used by itself as a polishing abrasive, or in combination with other harder abrasives (CMP Polishing). For polishing hard, and oftentimes brittle materials such as glass and ceramics, the primary polishing mechanism is chemical. For metals, composites and microelectronic components, colloidal silica functions more as a traditional abrasive and mechanically polishes the surface.

For CMP polishing with colloidal silica abrasives, the porous **BLACK CHEM 2** Polishing Pad works well because it allows for the polishing process to generate more heat and thus enhances the chemical polishing rate. **GOLDPAD** and **TEXPAN** polishing pads are also useful for polishing glass, ceramics and composites utilizing a combination of colloidal silica and diamond.

Colloidal silica suspensions also have very good dispersion characteristics, thus the particles are usually very uniform and work well for polishing metals. However, for polishing metals, care must be taken so that the colloidal silica does not dry out as this would effectively result in producing much larger crystallized abrasive particles.

The other key to successful polishing with colloidal silica and CMP abrasives is to clean the specimen surface immediately after the polishing step. The most basic cleaning process should take place, which includes running clean distilled water on the polishing pad for the last 15-30 seconds of the polishing step.

If cleaning is not accomplished before the colloidal silica or CMP abrasive crystallizes on the specimen surface, then either the polishing process should be repeated or the sample can be cleaned with a caustic cleaning solution. A commonly used cleaning solution for most materials after polishing with colloidal silica is a mixture of ammonium hydroxide (NH_4OH) with 30% hydrogen peroxide (H_2O_2).

Note: This solution may adversely react and etch copper and copper alloys.

COLLOIDAL SILICA

Colloidal Silica Polishing:

Colloidal silica abrasives for metallographic polishing typically range in particle size from 20 nm up to 70 nm (0.02-0.07 micron). The concentration of particles typically ranges between 25-50% solids. Even at these high concentrations, colloidal silica can be maintained in a nearly perfect suspension. The electrochemical stability of colloidal silica makes it an excellent chemical mechanical polishing abrasive for polishing ceramics. The main drawback to polishing with colloidal silica is that it will crystallize as it dehydrates. This is particularly troublesome around the lid of an open bottle. One way to reduce this crystallization is to add an ingredient to the colloidal silica suspension in order to reduce the evaporation rate of the water. A comparison of the two main types of colloidal silica, SIAMAT and SIAMAT 2 Colloidal Silica are listed in the following table.

Characteristics of Colloidal Silica Abrasives

PROPERTY	SIAMAT COLLOIDAL SILICA	SIAMAT 2 COLLOIDAL SILICA	SIAMAT BLUE COLLOIDAL SILICA
Particle Size	0.06 micron	0.02 micron	0.05 micron
pH	9.5-10.0	9.2-10.0	9.5-10.0
Concentration	45-50% solids	45-50% solids	45-50% solids
Specific gravity	1.39	1.25	1.39
Viscosity	15 cP	20 cP	15 cP
Applications	Precision surface finishing abrasive for ceramics and glass. Ideal as a CMP abrasive when used by itself or with diamond polishing abrasives	Precision surface finishing abrasive for metals and microelectronic materials	Similar to SIAMAT colloidal silica with blue dye added to distinguish the product from other abrasives suspensions

Colloidal Silica Polishing Suspensions

PACE Product Name	Catalog Number	Qty	Price ($)
16 oz SIAMAT colloidal silica (0.06 micron)	**SI-100A-16**	16 oz	27.50
32 oz SIAMAT colloidal silica (0.06 micron)	**SI-100A-32**	32 oz	48.00
1/2 gallon SIAMAT colloidal silica (0.06 micron)	**SI-100A-64**	1/2 gallon	78.00
1 gallon SIAMAT colloidal silica (0.06 micron)	**SI-100A-128**	1 gallon	135.00
5 gallons SIAMAT colloidal silica (0.06 micron)	**SI-100A-640**	5 gallons	610.00
16 oz SIAMAT Blue colloidal silica (0.05 micron)	**SI-100B-16**	16 oz	27.50
32 oz SIAMAT Blue colloidal silica (0.05 micron)	**SI-100B-32**	32 oz	48.00
1/2 gallon SIAMAT Blue colloidal silica (0.05 micron)	**SI-100B-64**	1/2 gallon	78.00
1 gallon SIAMAT Blue colloidal silica (0.05 micron)	**SI-100B-128**	1 gallon	135.00
5 gallons SIAMAT Blue colloidal silica (0.05 micron)	**SI-100B-640**	5 gallons	575.00
16 oz SIAMAT 2 colloidal silica (0.02 micron)	**SI2-100A-16**	16 oz	27.50
32 oz SIAMAT 2 colloidal silica (0.02 micron)	**SI2-100A-32**	32 oz	48.00
1/2 gallon SIAMAT 2 colloidal silica (0.02 micron)	**SI2-100A-64**	1/2 gallon	78.00
1 gallon SIAMAT 2 colloidal silica (0.02 micron)	**SI2-100A-128**	1 gallon	135.00
5 gallons SIAMAT 2 colloidal silica (0.02 micron)	**SI2-100A-640**	5 gallons	610.00

SIAMAT Colloidal Silica

SIAMAT Blue Colloidal Silica

Low Crystallizing SIAMAT 2 Colloidal Silica

UCLEAN-012 Ultrasonic Cleaner

FEATURE	UCLEAN-012 DESCRIPTION
Ultrasonic Frequency	4 ultrasonic transducers
Ultrasonic Power	240 Watts
Timer	0-30 minutes
Heater	300W heating power
Temperature Range	104-140°F
Volume of Tank	2.6 gallons (10 L)
Electrical specification	110 / 220V (50/60 Hz)
Volume of Tank	2.6 gallons (10 L)
Overall Dimensions (W x D x H)	13 x 10.6 x 10.6 (330 x 270 x 270 mm)
Tank Dimensions (W x D x H)	11.8 x 9.5 x 5.9 (300 x 240 x 150 mm)
Weight	11 lbs (5 kg)
Catalog Number	UCLEAN-012

Benefits:

- Reduces abrasive contamination in-between sample preparation steps
- With an IPA corrosion inhibitor specimens have less staining and etching

Cleaning:

Cleaning and drying are perhaps the most underrated processing steps in specimen preparation. Yet improper cleaning can lead to misleading results. Cleaning is required to remove polishing residue as well as particulates on the surface. Cleaning can be classified into two categories:

Intermediate Cleaning:
Intermediate cleaning is important in order to minimize cross contamination of abrasives and swarf material. Intermediate cleaning is best accomplished with rinsing and ultrasonics. For the best results the specimen and holder should be pre cleaned with water and a cotton swab to remove excess abrasive and swarf.

Final Cleaning:
Final cleaning is the most important cleaning step for removing residue prior to specimen examination. For difficult to clean specimens, ultrasonic cleaning in alcohol can be very helpful.

Cleaning / Drying / Storage Products

PACE Product Name	Catalog Number	Qty	Price ($)
ULTRACLEAN 2 Ultrasonic Degreasing / Cleaning Solution (32 oz)	**UC2-1000-32**	32 oz	17.50
ULTRACLEAN 2 Ultrasonic Degreasing / Cleaning Solution (1/2 gallon)	**UC2-1000-64**	1/2 gallon	32.00
ULTRACLEAN 2 Ultrasonic Degreasing / Cleaning Solution (1 gallon)	**UC2-1000-128**	1 gallon	62.00
Compressed Non-flammable gas	**AIR-0100**	each	13.50
Organic Corrosion Inhibitor (100X concentrate in IPA)	**PCC-7500-32**	32 oz	22.00
Urethane Spray Coating	**URE-1000**	each	25.00
1.25-inch Plastic Storage Container	**STORE-0125**	25/pkg	42.00

ETCHING

Etching:

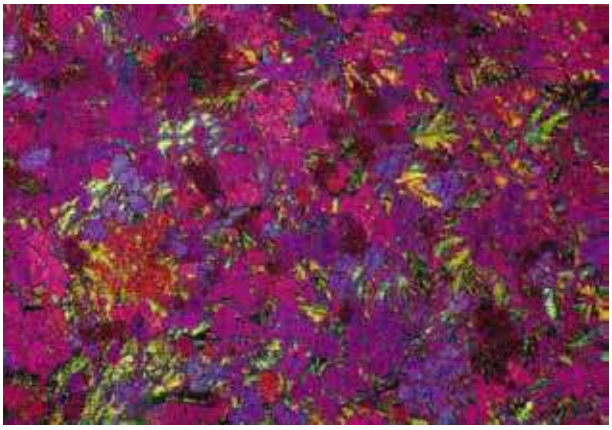
Etching is a process for revealing the structure of the material, common etching techniques include: Chemical, Electrolytic, Thermal, Plasma, Molten salt and Magnetic etching. The two most common techniques are chemical and electrochemical etching. Chemical etching is typically a combination of either an acid or base with an oxidizing or reducing agent in a solute such as alcohol. Electrochemical etching is a combination of chemical etching with an electrical voltage/current.

ETCHANT	COMPOSITION	CONC.	CONDITIONS	COMMENTS
ASTM No. 30	Ammonia Hydrogen Peroxide (3%) DI Water	62.5 ml 125 ml 62.5 ml	Mix Ammonia and water before adding peroxide. Must be used fresh. Swab 5-45 seconds	For etching copper, copper alloys and copper-silver alloys
Adlers Etchant	Copper ammonium chloride Hydrochloric acid Ferric chloride, hydrated DI Water	9 grams 150 ml 45 grams 5 ml	Immersion is recommended for 1-5 seconds	For etching 300 series stainless steel and other superalloys
Carpenters Stainless Steel Etch	FeCl3 CuCl2 Hydrochloric acid Nitric acid Ethanol	8.5 grams 2.4 grams 122 ml 6 ml 122 ml	Immersion etching at 20°C	For etching duplex and 300 series stainless steels
Kalling's No. 2	CuCl2 Hydrochloric acid Ethanol	5 grams 100 ml 100 ml	Immersion or swabbing etch at 20°C	For etching duplex and 400 series stainless steels and Ni-Cu alloys and superalloys
Kellers Etch	Distilled water Nitric acid Hydrochloric acid Hydrofluoric acid	190 ml 5 ml 3 ml 2 ml	10-30 second immersion. Use only fresh etchant	Excellent for aluminum and titanium alloys
Klemm's Reagent	Sodium thiosulfate solution Potassium metabisulfite	250 ml Saturated 5 grams	Etch for a few seconds to minutes	For etching alpha-beta brass, bronze, tin, cast iron phosphides, ferrite, martensite, retained austenite, zinc and steel temper embrittlement
Kroll's Reagent	Distilled water Nitric acid Hydrofluoric acid	92 ml 6 ml 2 ml	Swab specimen up to 20 seconds	Excellent for titanium and alloys
Nital	Ethanol Nitric acid	100 ml 1-10 ml	Immersion up to a few minutes.	Most common etchant for iron, carbon and alloys steels and cast iron - Immerse sample for seconds to minutes; Mn-Fe, MnNi, Mn-Cu, Mn-Co alloys.
Marbles Reagent	CuSO4 Hydrochloric acid Water	10 grams 50 ml 50 ml	Immerse or swab for 5-60 seconds.	For etching Ni, Ni-Cu and Ni-Fe alloys and superalloys. Add a few drops of H2SO4 to increase activity
Murakami's	K3Fe(CN)6 KOH Water	10 grams 10 grams 100 ml	CAUTION: Pre-mix KOH and water before adding K3Fe(CN)6	Cr and alloys (use fresh and immerse); iron and steels reveals carbides; Mo and alloys uses fresh and immerse; Ni-Cu alloys for alpha phases use at 75°C; WC and alloys use fresh and immerse; WC-Co and complex sintered carbides
Picral	Ethanol Picric acid	100 ml 2-4 grams	Seconds to minutes Do not let etchant crystallize or dry	Recommended for microstructures containing ferrite, carbide, pearlite, martensite and bainite. Also useful for magnetic alloys, cast iron, high alloy stainless steels and magnesium
Vilella's Reagent	Picric Acid Hydrochloric acid Ethanol	1 gram 5 ml 100 ml	Seconds to minutes	Good for ferrite-carbide structures (tempered martensite) in iron and steel

Common Aluminum and Titanium Etchants

PACE Product Name	Applications	Catalog Number	Qty	Price ($)
Kellers	Most common etchant for aluminum alloys (250 ml)	**Kellers**	250 ml	110.00
Kroll's	Most common etchant for titanium (250 ml)	**Krolls**	250 ml	110.00
Titanium Attack Polish	Used as a CMP polishing compound for titanium (500 ml)	**TI-AP-16**	16 oz	110.00

Zinc-Aluminum Alloy, 200X B.F. (etchant CrO3, Na2SO4)



Zinc-Aluminum Alloy, 100X Polarized (etchant CrO3, Na2SO4)

Common Nickel, Iron, Chromium Alloy Etchants

PACE Product Name	Applications	Catalog Number	Qty	Price ($)
Marble's	Nickel, nickel-iron alloys (250 ml)	**Marbles**	250 ml	110.00
Murakami's	Chromium alloys (250 ml)	**Murakamis**	250 ml	110.00
Waterless Kalling's	Iron and nickel base alloys (250 ml)	**Waterless Kallings**	250 ml	110.00

Common Stainless Steel Etchants

ETCHANT	Applications	Catalog Number	Qty	Price ($)
Adlers etchant	Very effective for etching austenitic 300 series stainless steels (250 ml)	**Adlers**	250 ml	110.00
Carpenters	300 Series Stainless Steel Etchant (250 ml)	**Carpenters**	250 ml	110.00
Kalling's No. 2	Martensitic 400 series stainless steels (250 ml)	**Kallings No. 2**	250 ml	110.00
Frys Reagent	Precipitation hardened stainless steels (250 ml)	**Frys Reagent**	250 ml	110.00

Common Copper and Brass Etchants

ETCHANT	Applications	Catalog Number	Qty	Price ($)
ASTM No. 30	Copper etchant (250 ml)	**ASTM No. 30**	250 ml	110.00
Copper No. 1	Copper & Brass (nitric acid and DI water) (250 ml)	**Copper No. 1**	250 ml	110.00
Copper No. 2	Copper & Brass (HCl and ferric chloride) (250 ml)	**Copper No. 2**	250 ml	110.00
Klemms	Stain etch for brass (250 ml)	**Klemms**	250 ml	110.00

Common Steel Etchants

ETCHANT	Applications	Catalog Number	Qty	Price ($)
2% Nital	2% is the most common etchant for non-heat treated or welded steels (250 ml)	**Nital-2**	250 ml	110.00
3% Nital		**Nital-3**	250 ml	110.00
5% Nital		**Nital-5**	250 ml	110.00
8% Nital		**Nital-8**	250 ml	110.00
Picral	Heat treated steels (250 ml)	**Picral**	250 ml	110.00
Vilella's	Most common etchant for carburized/ heat treated steels (250 ml)	**Vilella's**	250 ml	110.00

Oxide Ceramic Etchants

ETCHANT	CONCENTRATION	CONDITIONS	COMMENTS
Thermal etching	Air	Minutes to hours at 100-200° Celsius below the sintering temperature	AL2O3, Al2O3-MgO
Molten Salt	Potassium hydrogen fluoride melt	5-10 minutes in Pt crucible	Al2O3, Al2SiO5
Distilled water Phosphoric acid	15 ml 85 ml	Boiling for 5 minutes to 2 hours	Al2O3
Distilled water Sulfuric acid	50 ml 50 ml	Boiling for 1-5 minutes	ZrO2

Carbide Ceramic Etchants

ETCHANT	CONCENTRATION	CONDITIONS	COMMENTS
Molten Salt	Sodium or potassium bicarbonate melt	10 minutes in Pt crucible	SiC
Hydrochloric acid Hydrogen peroxide (30%)	10 ml 10 ml	Seconds to minutes	WC

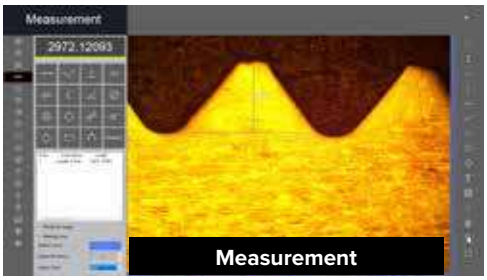
Nitride Ceramic Etchants

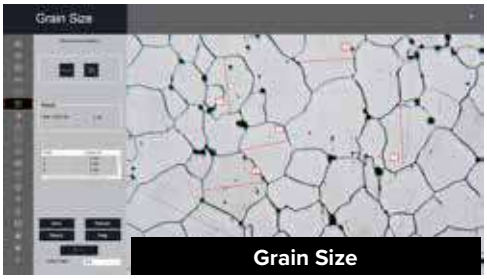
ETCHANT	CONCENTRATION	CONDITIONS	COMMENTS
Thermal etching	High purity Nitrogen	Several hours at 1600° Celsius	Si3N4
Molten Salt	Potassium hydroxide melt	Seconds to minutes in Pt crucible	Si3N4
Hydrofluoric acid	100%	10-15 minutes	Si3N4

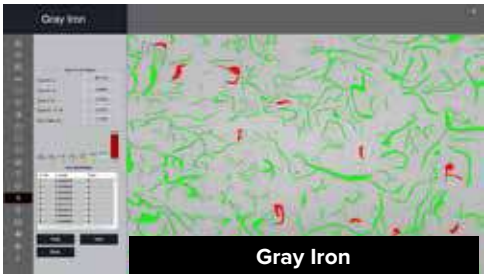
MATERIALS PLUS

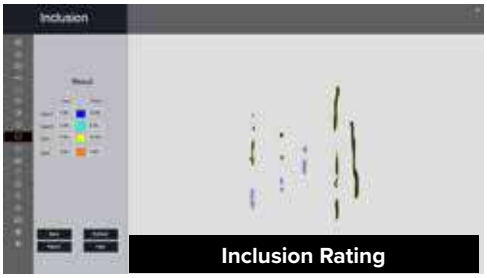
- Metallographic Image Analysis Modules
- Basic Measurements
- Grain Size
- Gray Iron
- Spheroidal or Ductile Gray Iron
- Carbide
- Porosity
- Inclusion Rating
- Coating Thickness
- Spheroidization
- Decarburization
- Segmentation
- DAS - Dendritic Spacing
- Stitching

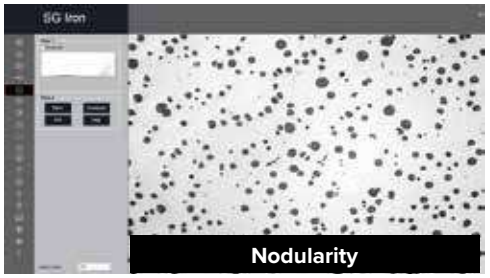
REQUEST A QUOTE
www.metallographic.com

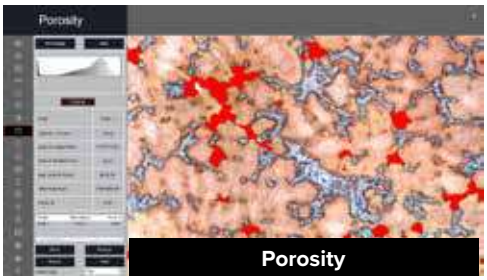


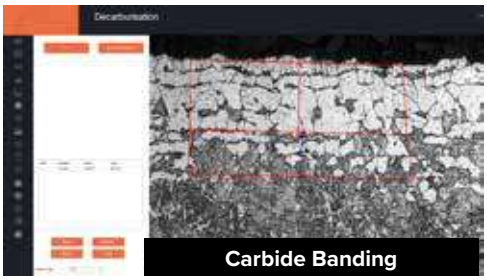


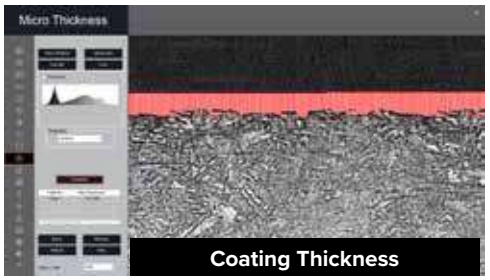


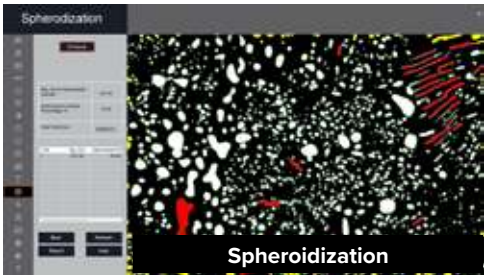


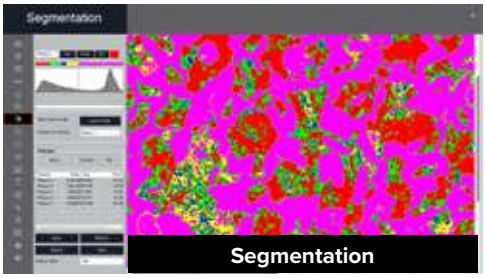












Measurement Modules

MODULE	MEASUREMENT	MEASUREMENT BASIS	ICON / web link
Measurement	Manually draw lines on traces, shapes	Straight length, angle, curved length, width, area, radius, perimeter, area by keyboard	
Grain Size	Heyn lineal intercept procedure, Abrams Three-Circle Procedure, Random Line Intersection Methods, Jeffries Planimetric Method, Comparison Procedure Method	ASTM E112	
Gray Iron	Graphite flakes are described by the type and distribution of graphite in cast iron with the following three classifications: Type VII for graphite form, A-E distribution of graphite and graphite size (1-largest to 8-smallest)	ASTM A-247	
SG Iron	Nodularity describes the type and distribution of graphite in cast iron with the following three classifications: Types I-VI for graphite form, A-E distribution of graphite and graphite size (1-largest to 8-smallest)	ASTM A-247-67	
Carbide Banding	Estimates the amount of iron carbide or cementation in steels and cast irons. Carbide is measured as a volume fraction	ASTM E562 & E1245	
Porosity	Porosity are voids in the material caused by entrapped air and incomplete or poor sintering. Porosity can be measured as a volume fraction	ASTM E562 & E1245	
Inclusion	Characterizes the type, size and severity of the inclusion in wrought steel. The types include: SULFIDE (A TYPE), ALUMINA (B TYPE) SILICATE (C TYPE), GLOBULAR (D TYPE). Size is characterized as H-heavy or T-thin. Severity Level is based on the number or length	ASTM E45	
Coating Thickness	Measures a coating thickness after cross sectioning the specimen	ASTM B487	
Spheroidization	Nodules acquire blue color and non-nodules are set to a red color. Nodules are designated by Roman numbers from I to VI and by size using Arabic numbers 1 to 8. The results are reported along with the calculated nodules/sq mm	ASTM A892	
Decarburization	Decarburization is the loss of carbon at the metal surface due to chemical reaction(s) with the contacting media. The analysis estimates the average or greatest depth of decarburization in hardened or non-hardened steel products	ASTM E1077	
Segmentation or Phase Analysis	Phases are defined as physically homogenous and distinct constituents of the material. The phases are partitioned or segmented based on the intensity / gray scale of the various constituents and are characterized and measured using area or volume fraction measurements	ASTM E562 & E1245	
DAS (Dendrites)	Dendritic Arm Spacing (DAS) measures the mean spacing, minimum and maximum spacing as well as the standard distribution.		
Stitching	Stitching is the process of combining multiple images together for higher magnification analysis over a larger area. For example, this would be very useful for analyzing the thickness of a thin coating over a larger range.		

WELD CHECK

- Welding Features
- Leg Lengths
- Depth of Penetration
- Throat Height
- Root size
- Angle measurements
- Plate thickness and % weld penetration
- Toe undercut
- Face and Root reinforcement thickness

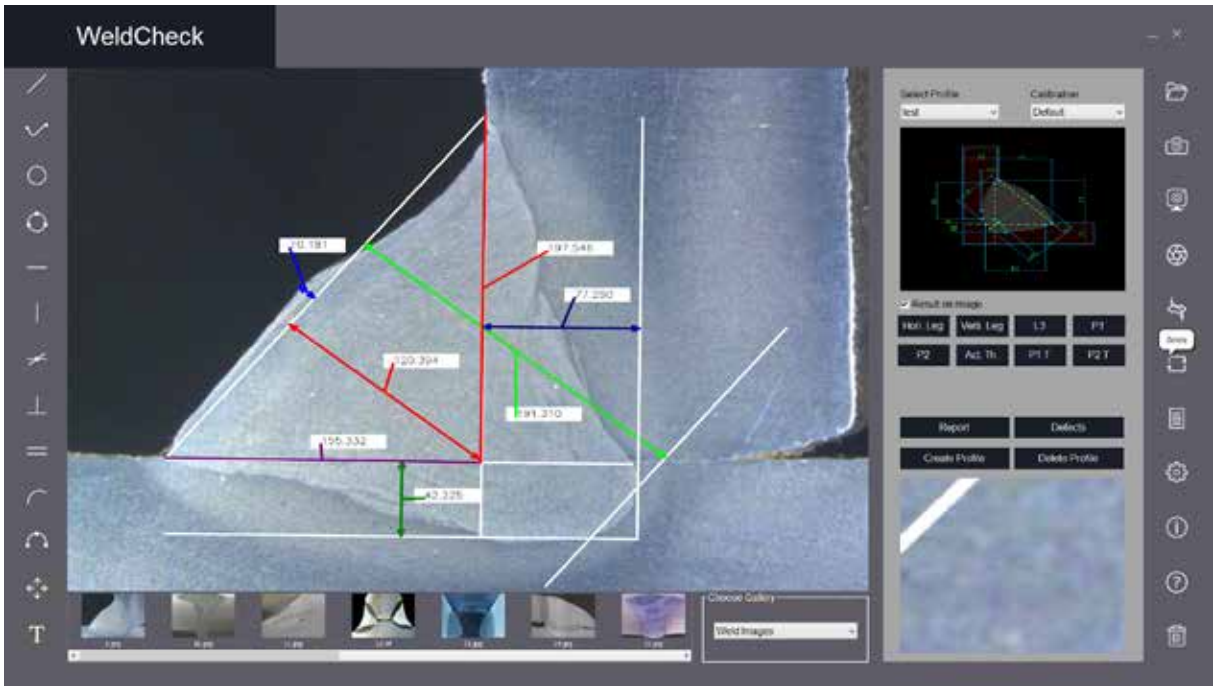
REQUEST A QUOTE
www.metallographic.com

HARDNESS PRO

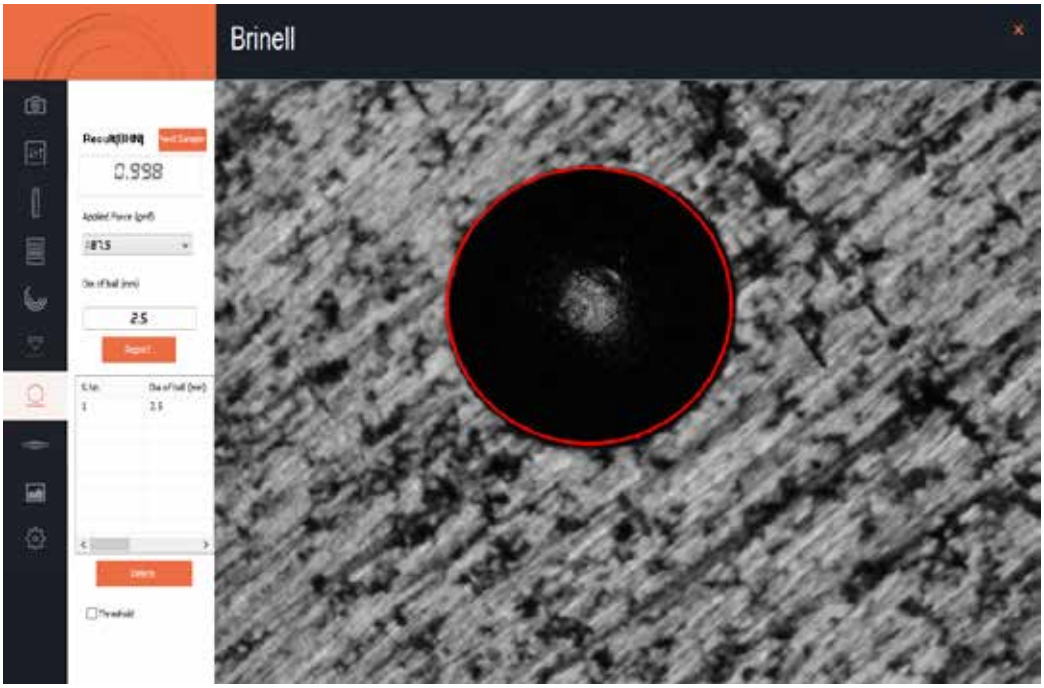
- Automatic or Interactive measurement of Vickers, Knoop and Brinell Indents
- Manual measurement on live image or acquired image
- Automated calculation of the best circumference minimizes the average quadratic error
- Image acquisition in high resolution 64-bit Colors
- In the event, that the automatic measurement fails, the program offers the possibility to manually measure through the acquisition of three points in Brinell, D1 and D2 in Vickers and Simple L in Knoop
- Accuracy up to 0.001 µm
- Multi-field analysis
- Case Hardness depth (CHD) measurement is automatic

REQUEST A QUOTE
www.metallographic.com

WELD CHECK Measurement Module



HARDNESS PRO Measurement Module



SPEC-STORE

SPEC-STORE

- Removable and interchangeable trays so the user can design the cabinet's interior to their personalized needs
- Trays store 1-inch, 1.25-inch, 1.5 inch or 2-inch diameter specimens (sold separately)
- User can remove trays from a drawer to store polishing pads if desired

CAB-C CAB-F

SAFETY CABINETS

- Heavy Duty Steel Cabinets
- Yellow Ventilated Flammable Cabinet
- Blue Ventilated Chemical Cabinet
- Corrosion resistant shelves

FUME-HOOD

FUME HOOD

- Digital feedback speed control
- LED speed display
- Easy to use
- Flexible
- Ideal for all materials
- User friendly
- Easy service access
- Sink with water tap
- Built-in plumbing for air/gas
- Large storage cabinet
- Built-in 110 VAC outlets

Specimen Storage Cabinet

DESCRIPTION	SPECIFICATIONS
Cabinet	Specimen Storage
Drawers / Shelves	10 stainless steel drawers
Specimen spacer trays (2 per drawer)	1-inch and 25 mm - 50 mounts/tray 1.25-inch and 30 mm - 45 mounts/tray 1.5-inch - 28 mounts/tray 40 mm - 28 mounts/tray 2-inch and 50 mm - 18 mounts/tray
Dimensions (WxDxH)	21.75 x 18 x 27-inches (552 x 470 x 686 mm)
Weight	100 lbs (46 kgs)
Catalog Number	SPEC-STORE

REQUEST A QUOTE
www.metallographic.com

Safety Storage Cabinets

CABINET	CHEMICAL	FLAMMABLE
Dimensions (WxDxH)	43 x 18 x 44-inches (1092 x 457 x 1118 mm)	43 x 18 x 65-inches (1092 x 457 x 1651 mm)
Weight	220 lbs (100 kg)	304 lbs (140 kg)
Color	Blue	Yellow
Catalog Number	CAB-C	CAB-F

REQUEST A QUOTE
www.metallographic.com

Fume Hood

DESCRIPTION	SPECIFICATIONS
Overall Dimensions (WxDxH)	47.2 x 32 x 118-inches (1200 x 810 x 3000 mm)
Chamber Dimensions (WxDxH)	37 x 26 x 47-inches (940 x 660 x 1200 mm)
Sink Dimensions (WxDxH)	4.25 x 8.75 x 4.75-inches (120 x 220 x 120 mm)
Electrical Specification	110V
Weight	540 lbs (245 kg)
Catalog Number	FUME-HOOD

REQUEST A QUOTE
www.metallographic.com

MEGA-BENCH

- One drawer and double door cabinet
- Can support up to 661 lbs (300 kgs)
- Engineered to support the MEGA bench top abrasive cutters
- Optional replaceable protective bench cover available

LAB EQUIPMENT BENCHES

- Designed to fit with one another or stand-alone
- Double door cabinets and single drawer on the S-Benches and D-Benches, one cabinet on the C-bench
- Supports up to 661 lbs (300 kgs)
- Optional replaceable protective bench covers and back panels available

MICROSCOPE BENCHES

- Excellent for microscopes and microhardness testers
- Designed to include chair access
- Optional replaceable protective bench covers and back panels available

MEGA Abrasive Cutter Bench

DESCRIPTION	SPECIFICATIONS
Cabinet	Designed for MEGA Abrasive Cutters
Dimensions (WxDxH)	39.4 x 29.5 x 33.5-inches (1000 x 750 x 851 mm)
Weight	133 lbs (60 kg)
Catalog Number	MEGA-T2-BENCH & MEGA-T3-BENCH

REQUEST A QUOTE
www.metallographic.com

Laboratory Equipment Benches

DESCRIPTION	SPECIFICATIONS		
Cabinet	Short Equipment Bench	Long Equipment Bench	Corner Bench
Dimensions (WxDxH)	39.25 x 29.5 x 33.5 -inches (997 x 749 x 851 mm)	78.75 x 29.5 x 33.5-inches (2000 x 749 x 851 mm)	55.5 x 48.75 x 33.5 (1388 x 1238 x 851 mm)
Weight	153 lbs (70 kg)	297 lbs (135 kg)	120 lbs (55 kg)
Catalog Number	S-BENCH	D-BENCH	C-BENCH

REQUEST A QUOTE
www.metallographic.com

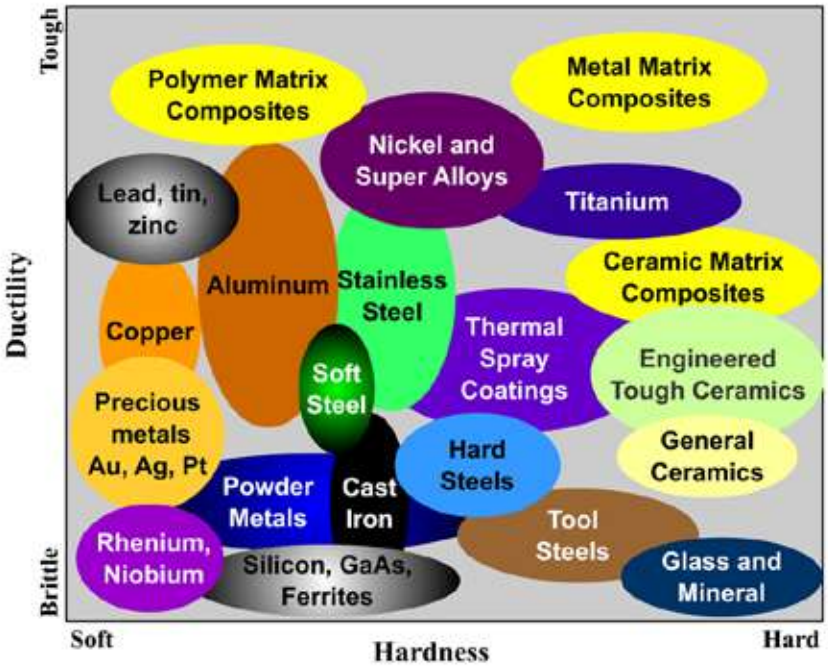
Microscope Benches

DESCRIPTION	SPECIFICATIONS	
Cabinet	Short Microscope Bench	Long Microscope Bench
Dimensions (WxDxH)	78 x 29.5 x 33.5 -inches (2000 x 749 x 851 mm)	103 x 29.5 x 33.5-inches (2610 x 749 x 851 mm)
Weight	153 lbs (70 kg)	337 lbs (153 kg)
Catalog Number	S-MBENCH	D-MBENCH

REQUEST A QUOTE
www.metallographic.com

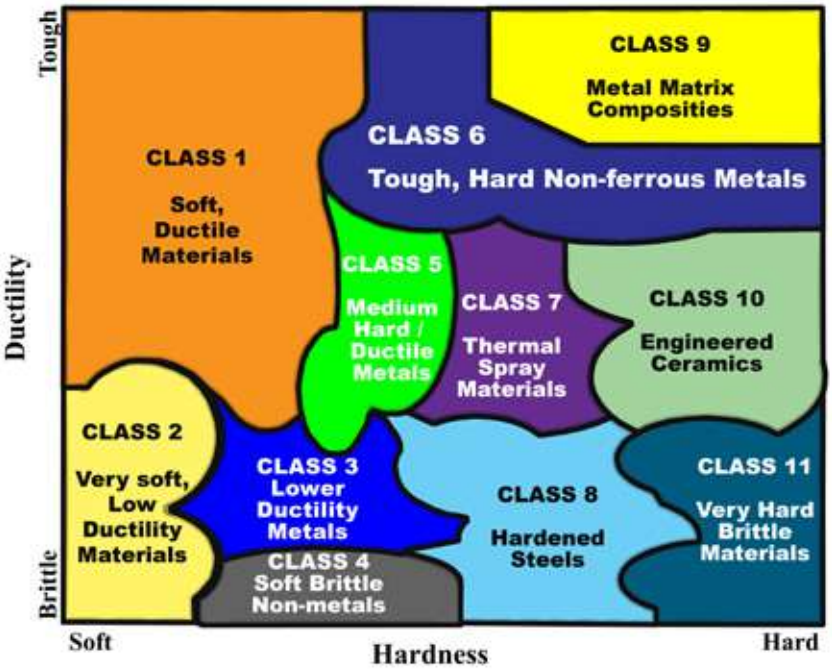
SAMPLE PREPARATION BASICS:

Metallographic specimen preparation requires a knowledge of the specimen properties, the most important characteristics being hardness and ductility of the metallographic specimen. Based on these material properties, the proper metallographic consumables and equipment parameters can be determined. The following charts plot the relative hardness and ductility for most metallographic materials.



SAMPLE PREPARATION CLASSES:

From this chart the hardness / ductility is categorized into eleven different classes. Each of these classes then represents a sample preparation method based on the mechanical properties of the material.



Class	Materials	Overview
CLASS 1	Soft, ductile materials (e.g. aluminum, copper, lead, tin, zinc, PMC's)	Relatively easy to prepare most materials in this Class with the use of alumina abrasives and 1-2 polishing steps
CLASS 2	Very soft, low ductility materials (e.g. rhenium, niobium, gold, sliver)	Can be difficult to prepare because these materials are very soft and abrasives can become embedded into the specimen
CLASS 3	Low ductility metals (e.g. powder metals and cast irons)	Initial grinding with SiC abrasives is recommended, however, rough polishing must minimize pull-out
CLASS 4	Soft, brittle nonmetals (e.g. silicon, GaAs, electronic devices, ferrites)	Subsurface damage must be minimized in cutting, grinding and polishing of these materials. This requires the proper selection and application of the abrasive
CLASS 5	Medium hard, ductile metals (e.g. soft steels, stainless steels)	Relatively easy to prepare most materials in this Class with the use of SiC abrasives and 1-2 polishing steps
CLASS 6	Tough, hard, non-ferrous metals (e.g. super alloys, titanium)	Relatively easy to prepare most materials in this Class with the use of SiC abrasives and 1-2 polishing steps
CLASS 7	Thermal spray materials	Can pose significant preparation challenges depending upon the properties of the coating. See specific preparation procedures
CLASS 8	Hardened steels (e.g. high carbon and tool steels)	Relatively easy to prepare most materials in this Class with the use of SiC abrasives and 1-2 polishing steps
CLASS 9	Metal Matrix Composites	Very dependent upon both the matrix and filler materials properties. See specific preparation procedures
CLASS 10	Engineered Ceramics (e.g. zirconia, silicon nitride)	Successful preparation is typically accomplished with colloidal silica by CMP polishing
CLASS 11	Very hard, brittle materials (e.g. glass, minerals, CERMETS)	Minimize initial damage and use CMP polishing with colloidal silica abrasives

CLASS 1 - Ductile Materials

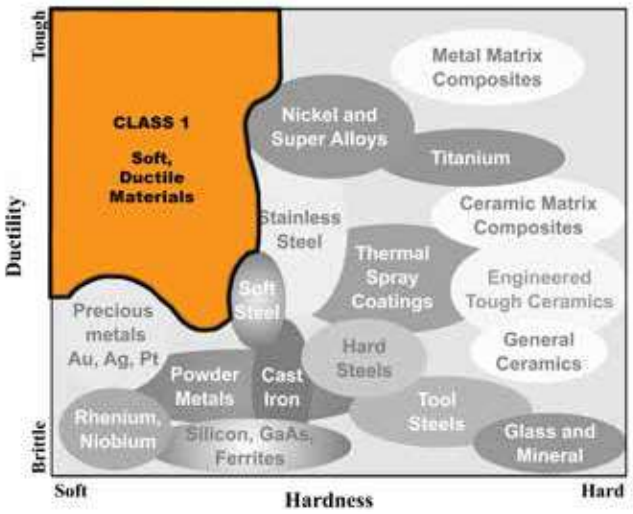
Examples include aluminum, copper, tin, lead, zinc and polymer matrix composites (PMC's).

Description:
CLASS 1 materials are relatively soft materials which have a wide range of industrial uses.

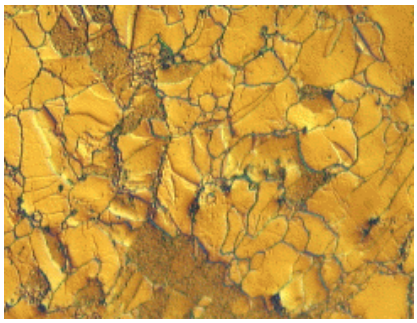
Preparation Challenges:
The difficulty in preparing these materials arises from the fact that these materials are very soft and often have oxide inclusions (aluminum and copper). Proper specimen preparation minimizes abrasive embedding and retains the specimen oxides, thus eliminating scratching and smearing. If the specimen is not prepared properly, the microstructure will not be accurately represented.

Sectioning:
MAXCUT abrasive blade (MAX-C or MAX-E series)

Mounting:
Compression mounting with Phenolic, Epoxy or Diallyl Phthalate compression mounting resins



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
P120 grit ALO paper P240 grit ALO paper	Water	5-10 lbs	100/100	Planar 1 min.	Off Off	N/A	
P500 grit ALO paper P1200 grit ALO paper	Water	5-10 lbs	100/100	1 min. 1 min.	Off Off		
1 micron DIAMAT diamond on ATLANTIS polishing pad	DIALUBE Purple Extender	5-10 lbs	100/100	2 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on NAPPAD polishing pad	-	5-10 lbs	100/100	1 min.	15 seconds / 5 seconds		



Pure zinc, 100X (DIC), Etchant 10 grams NaOH in 100 ml D.I. water for 5 seconds

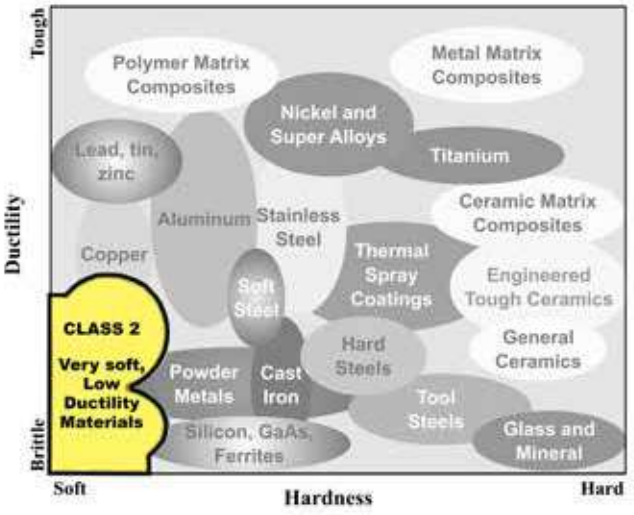
Tough Pitch Copper, 100X (B.F.), Etchant NH4OH/H2O2 for 5 seconds

CLASS 2 - Very Soft, Ductile Materials

Examples include refractory metals (tungsten, rhenium, niobium, molybdenum), rare earths, precious metals.

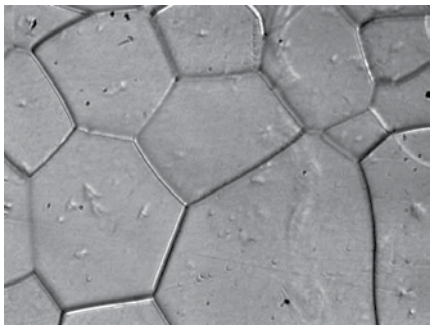
Description:
CLASS 2 materials include refractory metals such as rhenium, niobium and tungsten which have very high melting temperatures; however, they are typically very soft and require the same specimen preparation considerations as other very soft metals.

Preparation Challenges:
For very soft materials, any loose or fractured abrasive particles can become easily embedded. This makes specimen preparation very difficult because it gums up diamond grinding disks or the specimen can become embedded with fractured SiC particles when ground with SiC papers. The key to preparation of these materials is to use tougher alumina abrasives and to chemically etch the specimen in-between each grinding step. The purpose of etching is to remove the embedded particles so as not to carry them over to the next grinding step as contamination.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
P120 grit ALO paper P240 grit ALO paper	Water	5-10 lbs	100/100	Planar 1 min.	Off Off	N/A	
P500 grit ALO paper P1200 grit ALO paper	Water	5-10 lbs	100/100	1 min. 1 min.	Off Off		
1 micron DIAMAT diamond on ATLANTIS polishing pad	DIALUBE Purple Extender	5-10 lbs	100/100	2 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on MICROPAD polishing pad	-	5-10 lbs	100/100	1 min.	15 seconds / 5 seconds		

99.9% Silver, etched with ammonia peroxide, 200X B.F



Rhenium (BF), etched

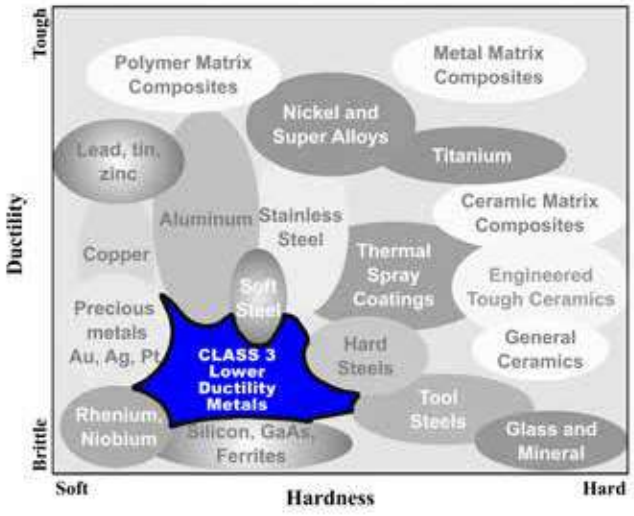
CLASS 3 - Lower Ductility Metals

Examples of lower ductility metals include powder metals and cast iron.

Description:
Powder metallurgy is an example of a CLASS 3 low ductility materials which is a very useful manufacturing process for parts designed with hard-to-machine geometries. The process includes pressing a metal powder into its shape and then sintering it just below the melting temperature of the alloy.

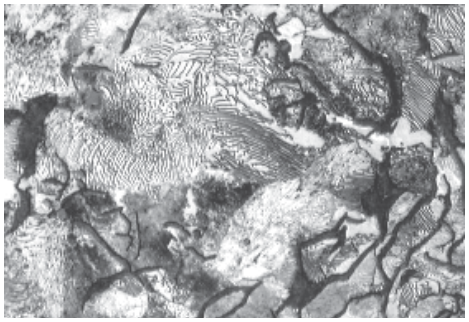
Preparation Challenges:
The metallographic specimen preparation of powder metallurgy samples is affected by the specimen's composition, packing and sintering conditions. Microstructural features of interest include: porosity, grain size, inclusions and orientation of voids. Proper metallurgical preparation takes into account that the microstructure may be porous and perhaps somewhat brittle due to inadequate sintering conditions.

Vacuum impregnation is often used to support voids and porosity before initial grinding. In addition, metal smeared into pores can be removed by an intermediate etch in-between polishing steps.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
120 grit SiC paper 240 grit SiC paper	Water	5-10 lbs	200/200	Planar 1 min.	Off Off	N/A	
360 grit SiC paper 600 grit SiC paper 800 grit SiC paper 1200 grit SiC paper	Water	5-10 lbs	200/200	1 min. 1 min. 1 min. 1 min.	Off Off Off Off		
1 micron DIAMAT diamond on GOLDPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	200/200	2 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on TRICOTE polishing pad	-	5-10 lbs	100/100	30 sec.	15 seconds / 5 seconds		

Tungsten refractory metal, 200X (DIC), etched with Murakami's reagent



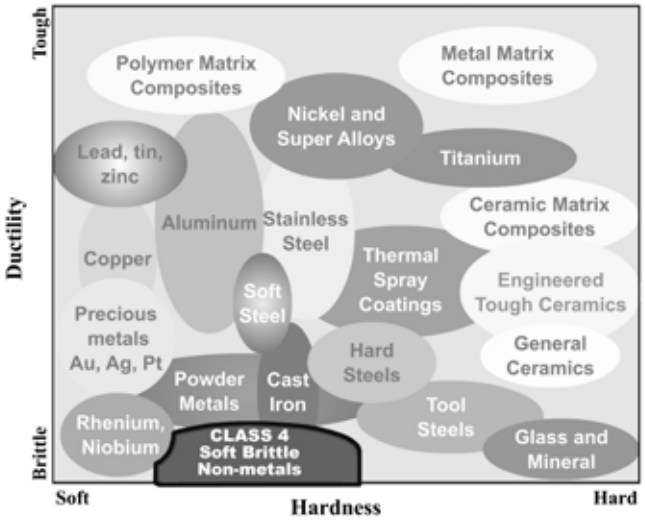
Graphite cast iron, 2% nital etchant, 500X

CLASS 4 - Soft, Brittle Nonmetals (Electronics)

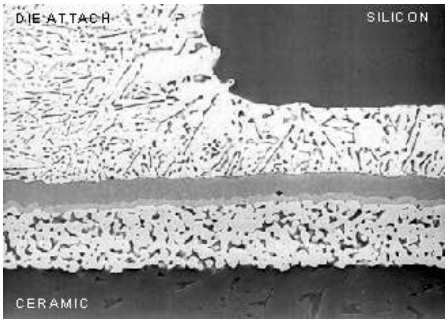
Examples include ceramic capacitors, silicon, GaAs, ferrites, PZT's, MEMS devices.

Description:
Ceramic capacitors are an example of a CLASS 4 softer more brittle types of material. These materials are typically very small, inexpensive devices used in cell phones, computers and other electronic products. MLC devices are constructed of alternating layers of metal and ceramic, with the ceramic material acting as the dielectric.

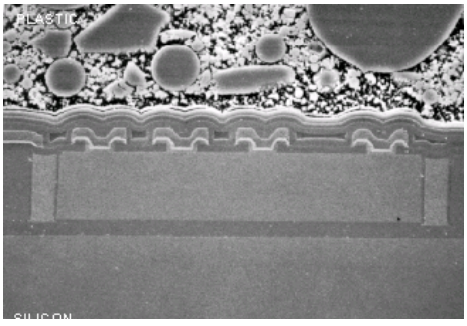
Preparation Challenges:
Microstructural analysis of a BaTiO3 ceramic capacitor includes looking for missing metal layers, as well as examining for gaps and voids in the ceramic substrate. Microstructural preparation of multi-layer BaTiO3 ceramic capacitors requires minimizing polishing relief and damage to the coating or ceramic substrate. This is accomplished by filling the existing voids with a castable resin under vacuum and then curing at a higher pressure. Initial grinding is required to open up the capacitor. The goal is to minimize microstructural damage at this step. Rough and final polishing are recommended on woven polishing pads using diamond and colloidal silica, respectively.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
30 micron Diamond Film 15 micron Diamond Film	POLYLUBE Diamond Extender	5-10 lbs	200/200	Planar 3 min.	Off Off	N/A	
9 micron Diamond Film 6 micron Diamond Film 3 micron Diamond Film	POLYLUBE Diamond Extender	5-10 lbs	200/200	2 min. 2 min. 2 min.	Off Off Off		
1 micron DIAMAT diamond on ATLANTIS polishing pad	DIALUBE Purple Extender	5-10 lbs	200/200	1 min.	15 seconds / 3 seconds		
MICROPAD polishing pad	Colloidal Silica	5-10 lbs	200/200	30 sec.	15 seconds / 5 seconds		



Electronic die cross section



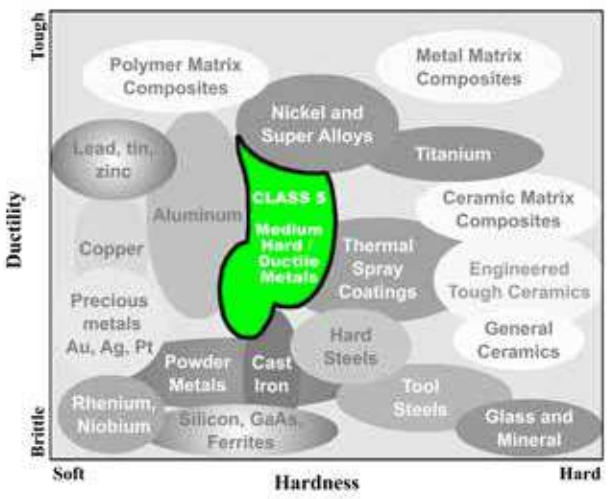
Electronic die cross section

CLASS 5 -Medium Hard, Ductile Metals

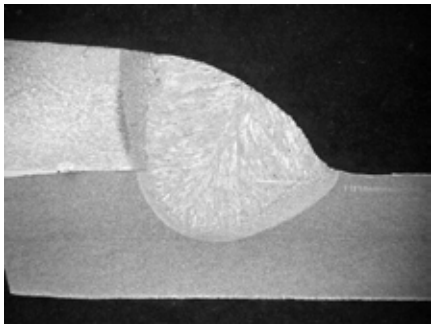
Examples include stainless steel, soft and medium hard steels.

Description:
CLASS 5 steels are ferrous alloys of iron containing relatively low concentrations of carbon (<2%). Steels also have a wide range of properties due to their ability to be heat treated and annealed. Depending upon the carbon concentration and other alloying elements, the microstructure of steel can be modified by heating, quenching and stress relief (annealing). Common microstructures include pearlite and ferrite for slow cooled low carbon steels and martensite for fast cooled high carbon steels. Pearlite and ferrite are relatively soft and ductile, whereas martensite is hard and brittle.

Preparation Challenges:
Metallographic specimen preparation is relatively straight forward.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
120 grit SiC paper 240 grit SiC paper	Water	5-10 lbs	200/200	Planar 1 min.	Off Off	N/A	
360 grit SiC paper 600 grit SiC paper 800 grit SiC paper 1200 grit SiC paper	Water	5-10 lbs	200/200	1 min. 1 min. 1 min. 1 min.	Off Off Off Off		
1 micron DIAMAT diamond on GOLDPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	200/200	2 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on TRICOTE polishing pad	-	5-10 lbs	100/100	30 sec.	15 seconds / 5 seconds		



Carbon Steel Weld, mag. 50X, Etched 2% Nital

1018 Water Quenched steel, 400X (B.F.), etched with 2% nital, Structure is Bainite

CLASS 6 - Tough, Hard Nonferrous Metals

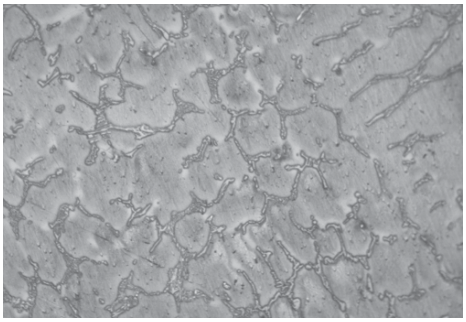
Examples include titanium, Inconel, Ni-Cr alloys, superalloys, nickel and cobalt alloys.

Description:
CLASS 6 materials include titanium alloys which are very useful because they have a good strength-to-weight ratio. This makes them ideal for use in areas ranging from aerospace to sports equipment.

Preparation Challenges:
Metallographic preparation of titanium and titanium alloys is fairly straight forward by conventional metallographic techniques.

Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
120 grit SiC paper 240 grit SiC paper	Water	5-10 lbs	300/300	Planar 1 min.	Off Off	N/A	
360 grit SiC paper 600 grit SiC paper	Water	5-10 lbs	300/300	1 min. 1 min.	Off Off		
9 micron DIAMAT diamond on POLYPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	3 min.	15 seconds / 3 seconds		
6 micron DIAMAT diamond on TEXPAN polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	3 min.	15 seconds / 3 seconds		
1 micron DIAMAT diamond on GOLDPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	3 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on TRICOTE polishing pad	-	5-10 lbs	200/200	30 sec.	15 seconds / 5 seconds		

Fe-Ni-Co-Al Alloy, 400X (Polarized Light)

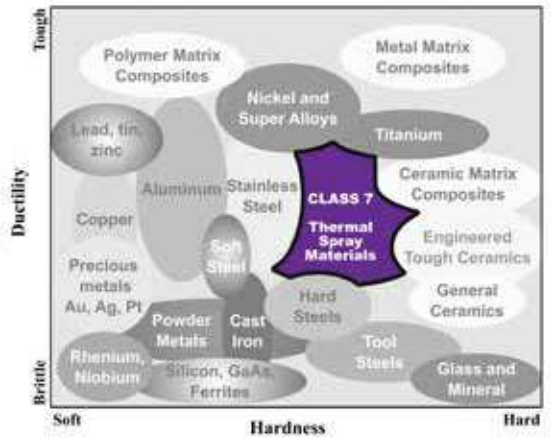

Inconel-625, Mag. 100X, Etchant-Carpenters

CLASS 7 - Thermal Spray Materials

Examples include powder spray coatings, ceramic coatings, intermetallic coatings.

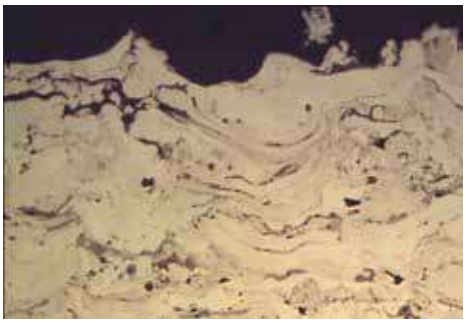
Description:
CLASS 7 Thermal spraying techniques are coating processes in which melted (or heated) materials are sprayed onto a surface. Thermal spraying can provide various coating thicknesses (20 microns to several mm) over a large area. Coating materials available for thermal spraying include metals, alloys, ceramics, plastics and composites.

Preparation Challenges:
Metallographic preparation of thermal spray coatings can be tricky; however, minimizing damage and understanding the chemical and mechanical properties of the coating and substrate will greatly improve successful specimen preparation. Note for WC-Co coatings, the cobalt is reactive with water so final polishing with 0.25 micron diamond replaces traditional alumina water based suspensions/slurries.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
240 grit SiC paper	Water	5-10 lbs	200/200	Planar	Off	N/A	
320 grit SiC paper 400 grit SiC paper 600 grit SiC paper 800 grit SiC paper 1200 grit SiC paper	Water	5-10 lbs	200/200	1 min. 1 min. 1 min. 1 min. 1 min.	Off Off Off Off Off		
3 micron DIAMAT diamond on GOLDPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	200/200	2 min.	15 seconds / 3 seconds		
1 micron DIAMAT diamond on ATLANTIS polishing pad	DIALUBE Purple Extender	5-10 lbs	200/200	2 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on MICROPAD polishing pad	Vibratory Polishing			15-30 minutes			

Nickel Chrome Thermal Spray Coating, as polished, Mag 1000x (B.F.)



Nickel-Aluminum Thermal Spray Coating, as polished, Mag 500x (B.F.)

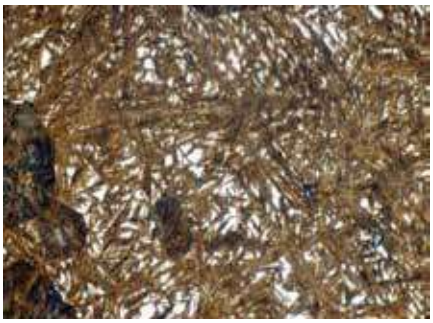
CLASS 8 - Hardened Steels

Examples include case hardened steels, tool steels, and through-hardened steels.

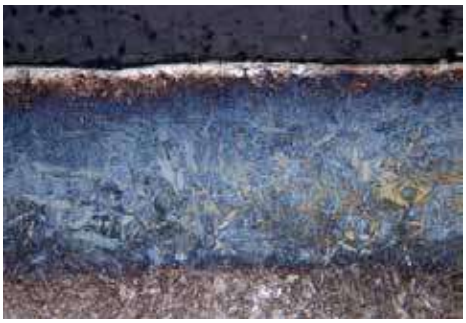
Description:
CLASS 8 Iron and steels play an important role in the world of structural and mechanical metals. Steel, in particular, is very useful because its hardness, wearability and toughness can be altered significantly by heat treating and annealing processes. Tool steels have high hardness (Rc>60) and generally are used with alloying metals such as vanadium, molybdenum and manganese.

Preparation Challenges:
Metallographic specimen preparation is relatively straight forward.

Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
120 grit SiC paper 240 grit SiC paper	Water	5-10 lbs	300/300	Planar 1 min.	Off Off	N/A	
360 grit SiC paper 600 grit SiC paper	Water	5-10 lbs	300/300	1 min. 1 min.	Off Off		
9 micron DIAMAT diamond on POLYPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	3 min.	15 seconds / 3 seconds		
6 micron DIAMAT diamond on TEXPAN polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	3 min.	15 seconds / 3 seconds		
1 micron DIAMAT diamond on GOLDPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	3 min.	15 seconds / 3 seconds		
0.05 micron Nanometer alumina on NAPPAD polishing pad	-	5-10 lbs	200/200	30 sec.	15 seconds / 5 seconds		



1095 Steel, Water Quenched, etched with Picral,1000X B.F. Martensite structure



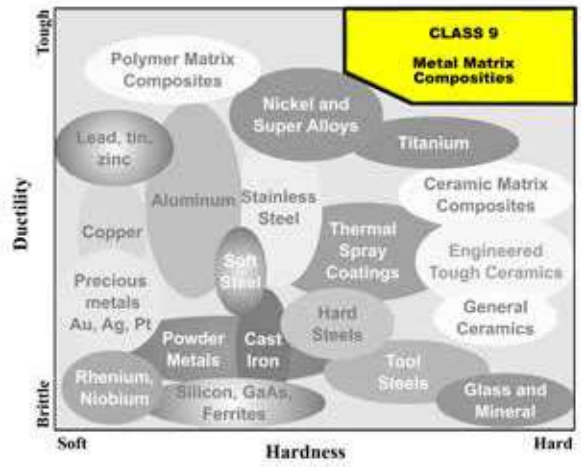
Nitrided steel, 200X (BF), Etchant Picral

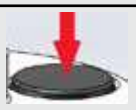
CLASS 9 - Metal Matrix Composites

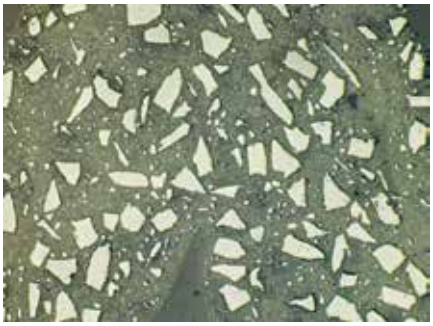
Examples include ceramic fibers in a metal matrix and/or ceramic particles in a metal matrix.

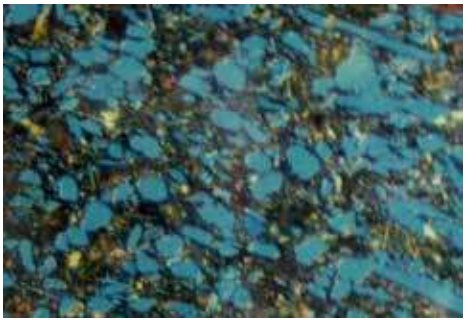
Description:
CLASS 9 Metal matrix composite applications have been found in high performance sporting goods and high performance military applications. They are primarily used to combine the hardness and energy absorbing characteristics of the ceramic with the bonding and ductility characteristics of the metal.

Preparation Challenges:
Hard particles in a metal matrix can be difficult to microstructurally prepare because of particle pull-out, as well as excessive polishing relief between the hard particles and the softer matrix.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
75 micron diamond grinding disk	Water	5-10 lbs	300/300	Planar	Off	N/A	
30 micron DIAMAT diamond suspension on CERMESH Metal Mesh cloth	-	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
9 micron DIAMAT diamond on POLYPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
3 micron DIAMAT diamond on GOLDPAD or ATLANTIS polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
SIAMAT Colloidal silica on TEXPAN polishing pad	-	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		


SiC particles in an Aluminum Matrix, 400X (DIC)

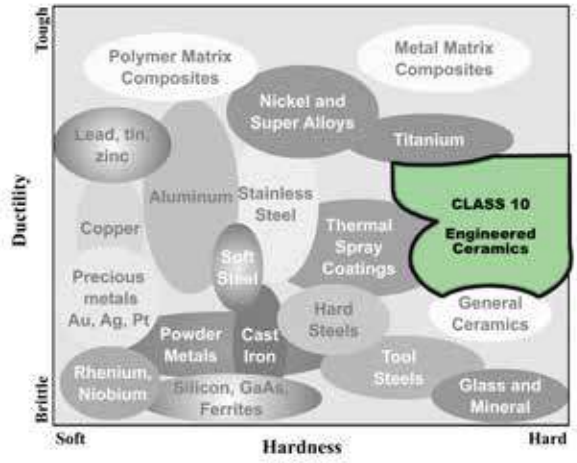

Zirconium Diboride particles in a Titanium Matrix Etched, 1000X (DIC)

CLASS 10 - Engineered Ceramics

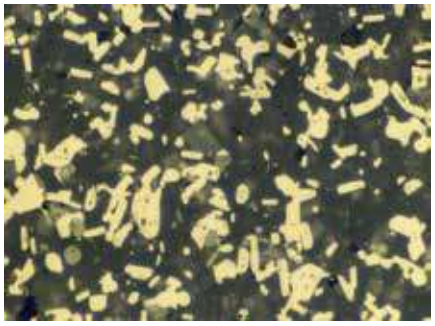
Examples include silicon nitride, zirconia, SiSiC, silicon carbide, boron carbide, alumina and ceramic matrix composites

Description:
CLASS 10 Engineered ceramics have found increasing applications for high temperature, corrosion resistance, low wearability and a number of other applications. An example of a CLASS 10 specimen preparation technique is for aluminum oxynitride (AlON) which is a ceramic composed of aluminum, oxygen and nitrogen. It is a semi-transparent ceramic that is harder than glass.

Preparation Challenges:
Engineered ceramics are very hard therefore specimen preparation procedures generally require a CMP (chemical mechanical polishing) component to remove induced microstructural damage. When examining the surface, it is recommended that a sputter coating be used to increase surface reflectivity.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
75 micron diamond grinding disk	Water	5-10 lbs	300/300	Planar	Off	N/A	
30 micron DIAMAT diamond suspension on CERMESH Metal Mesh cloth	-	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
6 micron DIAMAT diamond on TEXPAN polishing pad	SIAMAT colloidal silica	10 lbs	300/300	5 min.	15 seconds / 3 seconds		
1 micron DIAMAT diamond on GOLDPAD or ATLANTIS polishing pad	SIAMAT colloidal silica	10 lbs	300/300	5 min.	15 seconds / 3 seconds		
SIAMAT Colloidal silica on TEXPAN polishing pad	-	10 lbs	300/300	5 min.	15 seconds / 3 seconds		


AlON ceramic, B.F. 1000x (as polished)

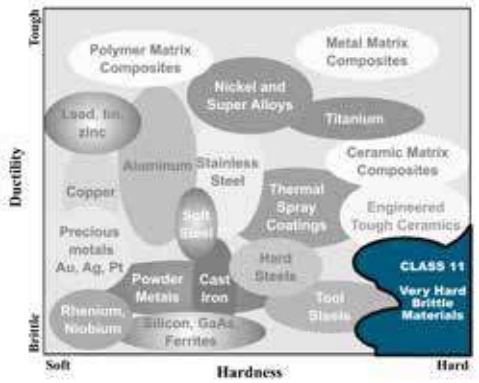
SiAlON ceramic, etched in molten KOH, Mag 20 KX

CLASS 11 - Very Hard Hard Brittle Materials & CERMETS

Examples include cermets such as tungsten carbide, glass and minerals.

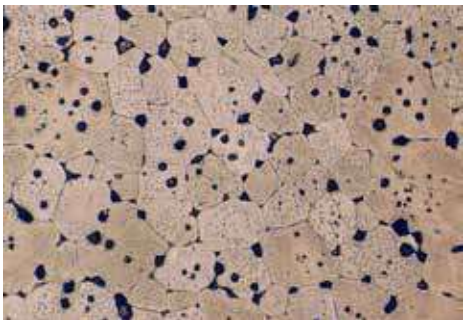
Description:
CLASS 11 CERMETS, glass and minerals are typically very hard. CERMETS are typically very wear resistant and very tough materials, whereas minerals and glass tend to be more brittle.

Preparation Challenges:
The key to proper specimen preparation of CERMET materials such as tungsten carbide is to grind with a semi-fixed abrasive (polycrystalline diamond on a metal mesh cloth), followed by combining diamond abrasives with a CMP (chemical mechanical polishing) abrasive such as SIAMAT™ colloidal silica.



Abrasive / Surface	Lubricant	Force / sample	Speed (Head / base)	Time (minutes)	Dispenser (frequency / duration)	Individual Force Mode	Central Force Mode
75 micron diamond grinding disk	Water	5-10 lbs	300/300	Planar	Off	N/A	
30 micron DIAMAT diamond suspension on CERMESH Mesh cloth	-	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
9 micron DIAMAT diamond on POLYPAD polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
3 micron DIAMAT diamond on GOLDPAD or ATLANTIS polishing pad	DIALUBE Purple Extender	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		
SIAMAT Colloidal silica on TEXPAN polishing pad	-	5-10 lbs	300/300	5 min.	15 seconds / 3 seconds		

Tungsten carbide, 2000X (DIC), etched with 50% HNO3 and 50% HCl



Periclase, 200X (B.F.) Thermal etching at 1200 Celsius for 2 hours

Index

A

ABRASIVE BELTS 46
ABRASIVE BELTS, POWDERS & ROLLS 46
Abrasive Blades 14, 15, 23
ABRASIVE CUTTING 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17
Abrasive Cutting Fluid 13
Abrasive Dispenser 53
ABRASIVE LAPPING FILMS 92, 93, 94, 96
Abrasive Powders 47
ABRASIVE SAWS 3, 4, 5, 6, 7, 8, 9, 10, 11
ACRYLIC 30, 36, 38, 39
ACRYLIC PLUS Acrylic 36, 39
Acrylic PREMIUM Clear Compression Mounting 32
Adlers Etchant 130
AlN substrate with a molybdenum/ nickel, gold coating 50, 107
AlON Ceramic 171
Alpha Alumina 120, 121
ALPHA-AUTO-MHT 134, 135
ALPHA-MHT-1000VK 134, 135
ALPHA-MHT-1000Z 132, 133, 135
ALPHA-MHT-2000Z 132, 133
Alumina Abrasive Belts 46
Alumina Grinding Papers 98, 99
Alumina Lapping Films 92, 94, 96
Alumina Slurries 121
Alumina Suspensions 122, 123
Aluminum 14, 15, 16, 49, 51, 92, 98, 121, 128, 129, 161, 162, 171
Anti-corrosion Additive 13
ASTM A-247 153
ASTM A-247-67 153
ASTM A892 153
ASTM B487 153
ASTM E45 153
ASTM E112 153
ASTM E562 & E1245 153
ASTM E1077 153
ASTM No. 30 128, 130
ASTM No 30 Etchant 128
ATLANTIS Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109
AUTOMATED POLISHERS 54, 56, 58, 60, 61, 77
AUTOMATED ROCKWELL TESTERS 142

B

BaTiO3 ceramic 165
Belt Grinder 45, 46
Black CHEM 2 Polishing Pad 100, 102, 103, 104, 105, 106, 107, 108, 109, 125
Boron Carbide 171
Brinell Hardness 144, 145

C

CAB-C 156, 157
CAB-F 156, 157
Calcined Alumina 120
Carbide 46, 47, 64, 68, 152, 153
Carpenters Etchant 128, 130
Case Hardened Steels 169
CASTABLE MOUNTING 36, 37, 38, 40, 42, 43
Castable pump dispenser 43
CASTABLE RESINS 36, 37, 38, 40, 42, 43
CASTAMOUNT Acrylic 36, 38
Cast Iron 47, 128, 153, 164
Central Force Grinding 54, 55, 57, 59, 61
Ceramic Coatings 168
Ceramic Matrix Composites 171
CERMESH Metal Mesh Cloth 100, 102, 103, 104, 105, 106, 107, 108, 109
CERMETS 161, 172
CLASS 1 161, 162, 163
CLASS 2 161, 163
CLASS 3 161, 164
CLASS 4 161, 165
CLASS 5 161, 166
CLASS 6 161, 167
CLASS 7 161, 168
CLASS 8 161, 169
CLASS 9 161, 170
CLASS 10 161, 171
CLASS 11 161, 172
CLEANING 127, 128
Clear Castable Mounting 42
Coating Thickness 152, 153
Cobalt 167, 168
Colloidal Alumina 121
COLLOIDAL SILICA 126, 128, 129, 130, 131
Composite Disk 84, 86, 88
Composite Grinding Disks 84, 86, 88
COMPRESSION MOUNTING 26, 27, 28, 30, 31, 32, 33, 34, 35
COMPRESSION MOUNTING CONSUMABLES 34
COMPRESSION MOUNTING PRESSES 27
Conductive Compression Mounting 34
Conductive Premium Compression Mounting 34

Copper 34, 98, 101, 121, 125, 128, 161, 162
Copper and Brass Etchants 130
Copper No. 1 Etchant 130
Copper No. 2 Etchant 130
Copper Plated Diamond Blades 22

D

DACRON II Polishing Cloth 101, 102, 103, 104, 105, 106, 107, 108, 109
Deagglomerated Alumina 120, 122, 124
Decarburization 152, 153
DIALLYL PHTHALATE Mounting Powder 30
DIALUBE Lubricant 119
DIAMAT Diamond 110, 111, 112, 114, 115, 116, 118, 162, 163, 164, 165, 166, 167, 169
DIAMAT MA diamond 116, 118
DIAMAT PC diamond 110, 111, 112, 114, 115
Diamond Extenders 119
DIAMOND EXTENDERS 119
DIAMOND GRINDING 82, 83, 84, 85, 86, 87, 88, 89, 90, 91
DIAMOND GRINDING ABRASIVES 82, 84, 86, 88, 90
Diamond Grinding Disk 82, 84, 85, 86, 87, 88, 89, 90, 91
  Composite Grinding Disks 84, 86, 88
  Metal Bonded Diamond Grinding Disk 84, 85, 86, 87, 88, 89, 90, 91
  Resin Bonded Diamond Disk 84, 85, 86, 87, 88, 89
Diamond Lapping Films 93, 95, 97
Diamond lubricants 119
Diamond Pastes 113, 117
Diamond Polishing Pastes 113
Diamond Suspensions 110, 111, 112, 114, 116, 118
Digital High Resolution Stereo Microscope 150
Disposable castable molds 43
Disposable protective gloves 35
Double-Sided Adhesive 66, 71, 75, 78, 80, 81
Ductile Materials 162, 163

E

Electronic die 165
Engineered Ceramics 161, 171
EPOCOMP Compresssion Powder 33
Epoxy Castable Resin 36, 40
EPOXY (glass-filled) Mounting Powder 30
Epoxy PLUS Castable Resin 36
EPOXY PLUS Epoxy 36
EPOXY - QUICK MOUNT 36
EPOXY - Standard 36
EPOXY - ULTRATHIN 36
EPOXY - ULTRATHIN PLUS 36, 41
ETCHING 128, 129, 130

F

Fast Curing Quick Mounting Epoxy 36
FELT PAD Polishing Pad 101
FEMTO 1100S Autopolisher 54, 55, 56, 57
FEMTO 1500S Autopolisher 54, 55, 56, 57
FEMTO 2200S Autopolisher 58, 59, 60, 61
FEMTO 2500S Autopolisher 58, 59, 60, 61
Fe-Ni-Co-Al Alloy 167
Ferrites 161, 165
FINAL POLISHING 120, 121
Frys Reagent 130
FUME HOOD 156

G

GaAs 161, 165
GIGA-S VIBRATORY POLISHER 62, 63
Glass 16, 21, 30, 33, 57, 61, 101, 125, 126, 149, 151, 161, 171, 172
Glass Filled Epoxy Compression Mounting 33
Glass Filled Epoxy-Phenolic 33
Gloves 35, 43
Gold 50, 107, 161
GOLDPAD Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109, 125, 162, 163, 164, 165, 167, 169
Grain Size 152, 153
Graphite Cast Iron 164
Gray Iron 152, 153
Grinding Direction 67
Grinding Foils 80
Grinding Pressure 67
Grinding Relative Velocity 70

H

HAND GRINDER 44, 45
Hardened Steels 169
HARDNESS PRO 133, 154, 155
HARDNESS TESTERS 132, 134, 138, 140, 145, 147

I

IM-3000B Microscope 148
IM-5000 Microscope 148
IMAGE ANALYSIS SOFTWARE 133, 135, 152, 153, 154, 155
Inclusion 152, 153
Inconel 167
Individual Force Grinding 54, 58
Intermetallic Coatings 168
Inverted Microscopes 148, 149

K

Kalling's No. 2 Etchant 128, 130
Kellers Etchant 128, 129, 131
Klemms Etchant 130
Knoop 120, 132, 133, 134, 135, 154
Kroll's Etchant 128, 129, 131

L

LAB EQUIPMENT BENCHES 158
LABORATORY BENCHES 158, 160, 162, 164, 166, 168, 170, 172
LABORATORY FURNITURE 156, 157, 159
LAPPING FILMS 92, 93, 94, 95, 96, 97
Latex Gloves 43
Lead 92, 98, 121, 127, 161, 162
Levigated Alumina 120
Lower Ductility Metals 164
Low Viscosity Epoxy 36
LSSA-011 Vacuum Chamber 36, 37

M

MacroVickers Tester 146
MAGNEPAD Magnetic Base 83, 109
MAGNETIC BACKED DISKS 83
Magnetic Plates 84, 86, 88
Magnetic Receiver Disks 109
MAGNETON Base Disk 83, 109
MANUAL POLISHERS 48, 50
Manual Rockwell Tester 138, 140
Marbles Etchant 128, 129
Material Removal Differential (MRD) 67
MATERIALS PLUS Software 152, 153
MAXCUT2 Abrasive Cutting Fluid 13
MAXCUT Abrasive Cutting Fluid 13
MBENCHES FURNITURE 158
MD Grinding Disks 83
Medium Hard, Ductile Metals 166
MEGA Abrasive Cutter Bench 159
MEGA-BENCH Furniture 158, 159
MEGA Cutter Vises 12
MEGA-M250S Manual Abrasive Cutter 2, 4, 5
MEGA T250S Manual Abrasive Cutter 2, 4
MEGA T300A Auto Abrasive Cutter 3, 6, 7
MEGA T300S Manual Abrasive Cutter 2, 6, 7
MEGA T350A Auto Abrasive Cutter 3, 8, 9
MEGA T350S Manual Abrasive Cutter 2, 8, 9
MEGA T400A Auto Abrasive Cutter 3, 10, 11
MEGA T400S Manual Abrasive Cutter 2, 10, 11
MEMS devices 165
Metal Bonded Diamond Grinding Disks 82, 83, 84, 85, 86, 87, 88, 89, 90, 91
METALLOGRAPHIC CLASS PROCEDURES 160
METALLOGRAPHIC MICROSCOPES 148, 149
Metallographic Polishers 49, 51, 55, 59, 63
METALLOGRAPHIC POLISHERS 44, 48, 50, 54, 56, 58, 60, 62
METALLOGRAPHIC SOFTWARE 153
Metallurgical Microscopes 149
Metal Matrix Composites 161, 170
MICROHARDNESS TESTERS 133, 134, 135, 143
MICROPAD Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109
MICROSCOPE BENCHES 158
Minerals 16, 82, 161, 172
Mixing Cups 43
MKLIP Specimen Clips 35, 43
MLC Devices 165
Mold Release 35, 43
MOLTEC 2 Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109
Molybdenum 50, 107, 163, 169
MONOCRYSTALLINE DIAMOND 116, 117, 118, 119, 136
Monocrystalline Diamond Paste 117
MRD 67
MULTICLIP specimen clips 35, 43
Murakami's Etchant 105, 128, 129

N

NANO 1000S Polisher 48, 49
NANO 1200S Polisher 50, 51
NANO 2000S Polisher 48, 49
NANO Low Viscosity 123
Nanometer Alumina 121, 162, 164, 166, 167, 168, 169
NAPPAD Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109
Nickel 50, 107, 129, 167
Nickel-Aluminum Thermal Spray Coating 168
Nickel Chrome Thermal Spray Coating 168
Ni-Cr alloys 167
Niobium 92, 98, 161, 163
Nital Etchant 128, 130
Nitrided steel 169
NYPAD Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109

O

OMEGA-5000-HV MacroVickers Tester 146
OMEGA-AUTO-HB Brinell Tester 144, 145
OMEGA-AUTO-RST Rockwell Tester 142, 143

OMEGA-AUTO-RT Rockwell Tester 142, 143
OMEGA-AUTO-ST Rockwell Tester 142, 143
OMEGA-DIGI-RST Rockwell Tester 140, 141
OMEGA-DIGI-RT Rockwell Tester 140, 141
OMEGA-HB-3000 Brinell Tester 144, 145
OMEGA-HB Brinell Tester 144, 145
OMEGA-RT2 Rockwell Tester 138, 139
OMEGA-RT-60/150 Rockwell Tester 138, 139
OMEGA-RT Rockwell Tester 138, 139, 140, 141
OMEGA-SRT-15/150 Rockwell Tester 138
Organic Corrosion Inhibitor 127
ORION Composite Disk 84, 86, 88

P

PENTA 5000A Hand Grinder 44, 45, 46
PENTA 7500S Belt Grinder 44, 45, 46, 47
Periclase 172
PHENOLIC Mounting Powders 30, 31
Phenolic PREMIUM Compression Mounting 31
PICO 155P Precision Saw 18, 19, 20
PICO 155S Precision Saw 18, 19, 20
PICO 200 Precision Saw 18, 19, 21
Picral Etchant 128, 130
POLISHING 48, 49, 50, 51, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 120
Polishing Pad 100, 101, 125
POLYCAST Polyester Resin 36
Polycrystalline Alumina 120, 121, 125
POLYCRYSTALLINE DIAMOND 110, 111, 112, 114
POLYESTER 36, 42, 80, 81
Polyester Film Backing 81
POLYLUBE 119
Polymer Matrix Composites 162
POLYPAD 100, 102, 103, 104, 105, 106, 107, 108, 109
POLYPAD Polishing Pad 100
Porosity 153
Powder Metals 161, 164
Powder Spray Coatings 168
Precious Metals 163
PRECISION SECTIONING 18, 19, 20, 22, 24
PRECISION SECTIONING CONSUMABLES 22, 24
PREMIUM Acrylics 36
PREMIUM Glass Filled Epoxy-Phenolic 33
Premium Metal Bonded Diamond Grinding Disk 90, 91
Preston's Equation 67
Pure zinc 162
PZT's 165

Q

QUICK MOUNT Epoxy 36
Quick release clamping vise 12

R

Rare Earths 163
RC-1000A Recirculating System 52, 53
Receiver Disks 83, 109
Recirculating / Filter System 53
Relative Velocity 70
Resin Bonded Diamond Grinding Disks 82, 84, 85, 86, 87, 88, 89
Reusable two piece plastic mold 43
Rhenium 92, 98, 161, 163
ROCKWELL HARDNESS TESTERS 138, 139, 140, 141, 142

S

SAFETY CABINETS 156
Safety Storage Cabinets 157
Scribing tool 35
Segmentation or Phase Analysis 153
Semi-Automated Dual Rockwell / Superficial Tester 138, 140
Semi-Automated Rockwell Tester 138, 140
Servo Motor 48
SG Iron 153
SiAlON Ceramic 171
SIAMAT 2 Colloidal Silica 126
SIAMAT Blue Colloidal Silica 126
SIAMAT Colloidal Silica 126
SiC Abrasive Belts 46
SiC Papers 64, 65, 66, 68, 69, 71, 72, 73, 75, 76, 77, 78, 79
SiC Papers with Adhesive Backing 64, 65, 68, 69, 72, 73, 76, 77
SiC particles in an Aluminum Matrix 170
SiC Powder 47
Silicon 45, 47, 68, 80, 92, 98, 161, 165, 171
SILICON CARBIDE ABRASIVE PAPERS 66, 68, 70, 72, 74, 76, 78
SILICON CARBIDE FOIL SYSTEM 80
Silicon Carbide Powders 47
Silicon Mold release 35, 43
Silicon Nitride 161, 171
Silicon rubber molds 43
Silver 128
SIRIUS Composite Disk 84, 86, 88
SiSiC 171
Slag 122
Soft, Brittle Nonmetals (Electronics) 165

Specimen clips 35
Metal MKLIP 35, 43
Plastic KLIP 35, 43
Plastic MULTICLIP 35, 43
Plastic SKLIP spring 35
Plastic UNIKLIP 35, 43
Specimen Storage Cabinet 157
Specimen storage container 43
SPEC-STORE Specimen Storage Cabinet 156, 157
Spherodization 152, 153
Squaring and planarizing holder 44, 47
Stainless Steel 3, 5, 7, 9, 11, 45, 63, 83, 103, 105, 107, 109, 128, 157, 166
Stainless Steel Etchants 130
Stainless Steel Wafering Blades 24
Steels 166, 169
STEREO MICROSCOPES 150
Superalloys 128, 167
SUPERMOUNT Acrylic 36, 39

T

Table Saw 18, 19
TERAPRESS Compression Mounting Press 26, 27, 28, 29, 30
TERAPRESS Heating/Cooling Blocks 29
TERAPRESS Mold Assemblies 28
TERAPRESS TP-7100S Compression Mounting Press 26, 27
TERAPRESS TP-7500S Compression Mounting Press 26, 27
TEXPAN Polishing Pad 100, 102, 103, 104, 105, 106, 107, 108, 109, 125
Thermal Spray Materials 168
Through-Hardened Steels 169
Tin 92, 98, 121, 128, 161, 162
Titanium 14, 15, 16, 128, 129, 161, 167
Titanium Attack Polish 129
Titanium Etchants 129
Tool Steels 161, 169
Tough, Hard Nonferrous Metals 167
TP-7100S Compression Mounting Press 26, 27
TP-7500S Compression Mounting Press 26, 27, 30
TP-TANK Recirculating / Cooling System 29
TRANSACRYLIC 32
TRICOTE Polishing Pad 101, 102, 103, 104, 105, 106, 107, 108, 109, 162, 163
Tungsten 92, 98, 163, 172
Tungsten Carbide 172
Tungsten refractory 164

U

UCLEAN-012 ULTRASONIC CLEANER 127
ULTRACLEAN 2 Ultrasonic Degreasing / Cleaning Solution 127
Ultrasonic Cleaning 127
ULTRATHIN 2 Epoxy PLUS Castable Resin 36
ULTRATHIN Epoxy 36
ULTRATHIN PLUS Epoxy 36, 41
UNIKLIP specimen clips 35, 43
Utility heat protective gloves 35

V

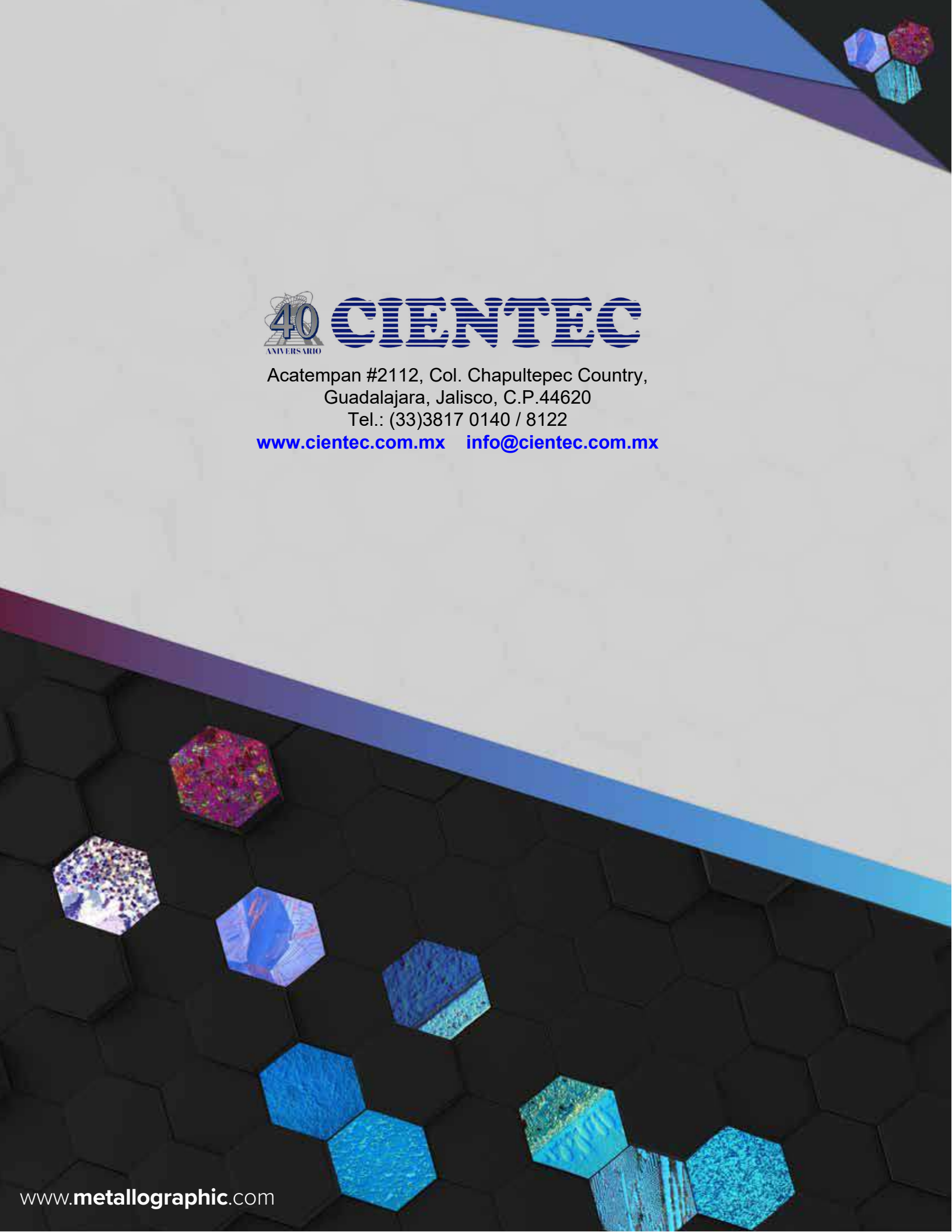
VACUUM MOUNTING 36
Vacuum Mounting Chamber 37
Vacuum Pump 37
Very Hard, Brittle Materials 172
VIBRATORY POLISHING 62, 63
Vickers 132, 133, 134, 135, 154
Vilella's Etchant 128, 130
VM-100 Digital Microscope 150, 152
VM-500-PLUS Digital Microscope 150

W

Wafering Blades 22, 23, 24, 25
CBN Wafering Blade 22, 23, 24
Copper Plated Diamond Blades 22
Electroplated 120-grit Diamond Blade 22, 23
Fine-grit Diamond 22, 23
Medium-grit Diamond 22, 23
Stainless Steel Core 24
WAFERING SAWS 19
Waterless Kalling's Etchant 129
WC-Co Coatings 168
WELD CHECK 154, 155

Z

ZETA 2000S 52, 53, 55, 112
Zinc 14, 15, 16, 92, 98, 128, 161, 162
Zinc-Aluminum Alloy 107, 129
Zirconia 25, 46, 98, 99, 161, 171
Zirconia Abrasive Belts 46
Zirconia Grinding Papers 99
Zirconium Diboride particles in a Titanium Matrix 105, 170
ZMSO745T Stereo Microscope 150



Acatempan #2112, Col. Chapultepec Country,
Guadalajara, Jalisco, C.P.44620
Tel.: (33)3817 0140 / 8122
www.cientec.com.mx **info@cientec.com.mx**