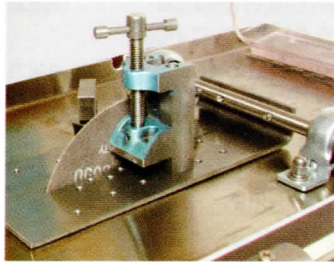


CS600A Cut-Off Saw Supplies and Accessories *continued*

■ Quick Vise Attachment



Jaw-vise attaches directly to vise plate for quick clamping of samples. Holds up to 1-1/2" (38mm) thick.

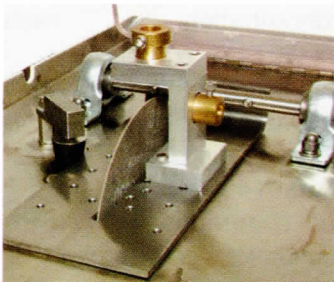
812-679 Quick Vise Attachment, each

■ Universal Vise Bar Set

Replacement vise bar set includes: 2 vise bars, 4 sets (4 ea.) vise screws 1 - 3" and Allen T-handle.

812-680 Universal Vise Bar Seteach

■ Fracture Specimen Holder



This accessory allows cutting to the point of interest in both axes in Tensile, Stress Rupture and Creep samples. The FSH fixture accepts threaded or un-threaded specimens up to 0.75" (19mm) OD. It is also excellent for holding drills, taps, bolts, screws and rods. Comes with 3 fixture collets with inside diameters of .51", .39" and .26" (13mm, 9.8mm, 6.7mm).

812-672 Fracture Specimen Holder, with 3 fixture colletseach

■ Cut-Off Blades



Aluminum Oxide Blades

812-610 Aluminum Oxide Blade for hardened steel and alloys, 6 x 0.040 x 5/8" holeeach
Softer Wheel cuts harder material (shorter life)

812-612 Aluminum Oxide Blade for medium / hard steel and iron, 6 x 0.040 x 5/8"each
Harder Wheel cuts softer materials (longer life)

812-613 Aluminum Oxide Blade for hardened steel and alloys, 6 x 0.025 x 5/8" holeeach
Thinner Softer Wheel cuts hardest materials (shortest life)

812-614 Aluminum Oxide Blade for delicate cutting of hardened steel and alloys, 6" x 0.015" x 5/8" holeeach

Silicon Carbide Blades

for cutting non-ferrous metallics, from hard materials such as titanium to softer materials such as aluminum and brass

812-620 Silicon Carbide Blade for non-ferrous metallics, 6" x 0.040" x 5/8" holeeach

812-622 Silicon Carbide Blade for delicate cutting non-ferrous metallics, 6" x 0.015" x 5/8" holeeach

Reinforced Abrasive Blade

812-624 Reinforced Abrasive Blade for brass, soft metals, plastics, 6" x 0.035" x 5/8" holeeach

Diamond Blades

812-630 Diamond Blade for ceramics, composites, 6" x 0.019" x 5/8" holeeach

812-632 Diamond Blade for geological use, 6" x 0.020" x 5/8" holeeach

812-325-5 Diamond Blade, fine grit, medium concentration, 6" x 0.14" x 5/8" holeeach

812-326-5 Diamond Blade, medium grit, medium concentration, 6" x 0.14" x 5/8" hole,each

Borazon Blade

812-640 Borazon Blade for Nickel and Cobalt alloys, 6" x 0.019" x 5/8" holeeach

■ Cutting Fluid, Soluble Oil (recommended)

SO type, water base, anti-corrosive; mix 1:40 water

812-650 Cutting Fluid, Soluble Oil1 quart

812-653 Cutting Fluid, Soluble Oil1 gallon

■ Cutting Fluid, Non-soluble Oil

812-656 Cutting Fluid, Non-soluble Oil1 quart

812-657 Cutting Fluid, Non-soluble Oil1 gallon

■ Dressing Sticks

812-420 Dressing Stick for Diamond Bladeseach

812-422 Dressing Stick for Abrasive Bladeseach

■ XP-300 Precision Sectioning Saw



Manual, precision sectioning saw designed for cutting printed circuit boards, ceramics, metal samples and composite components. Large working area of 6 x 10" with coolant bath below. The saw housing and table are made of non-corroding sturdy cross linked polyethyl-

ene to ensure durability. Powerful ¼ HP motor with variable speed of 400-4300 rpm, allows for selecting the best cutting speed for a variety of sample materials. Uses 4 and 5" diamond wafering blades with ⅝" arbor hole.

Includes one 4" diamond wafering blade, dressing stick and water soluble coolant.

812-300 XP-300 Precision Sectioning Saw, 115 VAC each

■ Diamond Sectioning / Wafering Blades

Use for sample preparation on all popular precision sectioning saws from PELCO®, Buehler, Struers, LECO, Allied and many others.

These competitively priced Smart Cut™ precision diamond wafering blades are designed to provide enhanced cutting speed, superior smooth cutting surface quality and maximum blade life. The Smart Cut™ diamond sectioning blades/wafering blades have the diamond crystals oriented in such a way that diamonds are only activated at the exposed layer. As the layer begins to wear out, diamonds in a new layer are activated keeping up the cutting rate.

The advantages are:

- Less glazing - requires minimal dressing
- Faster cutting action - leaves smooth finish
- More universal - on a greater variety of materials

All Smart Cut™ diamond blades have a diamond height of 3.2mm (⅛") and are available in 3, 4, 5 & 6" diameter with the industry standard ½" arbor hole and ⅝" hole.

Two grades are offered:

- Fine grit/medium concentration for hard materials, hard coating, optical materials
- Medium grit/medium concentration is useful for most metals and ceramics

½" Arbor Hole for Buehler, Struers, LECO, Allied and many others

812-310 Diamond Blade, 3" x 0.01" x ½" hole, fine grit, medium concentrationeach

- 812-311** Diamond Blade, 3" x 0.01" x ½" hole, medium grit, medium concentrationeach
- 812-315** Diamond Blade, 4" x 0.012" x ½" hole, fine grit, medium concentrationeach
- 812-316** Diamond Blade, 4" x 0.012" x ½" hole, medium grit, medium concentrationeach
- 812-320** Diamond Blade, 5" x 0.014" x ½" hole, fine grit, medium concentrationeach
- 812-321** Diamond Blade, 5" x 0.014" x ½" hole, medium grit, medium concentrationeach
- 812-325** Diamond Blade, 6" x 0.014" x ½" hole, fine grit, medium concentrationeach
- 812-326** Diamond Blade, 6" x 0.014" x ½" hole, medium grit, medium concentrationeach

5/8" Arbor Hole for PELCO® XP-300, PELCO® CS600A, CS600A-220, CS600D, CS600V

- 812-315-5** Diamond Blade, 4" x 0.012" x ⅝" hole, fine grit, medium concentrationeach
- 812-316-5** Diamond Blade, 4" x 0.012" x ⅝" hole, medium grit, medium concentrationeach
- 812-320-5** Diamond Blade, 5" x 0.014" x ⅝" hole, fine grit, medium concentrationeach
- 812-321-5** Diamond Blade, 5" x 0.014" x ⅝" hole, medium grit, medium concentrationeach
- 812-325-5** Diamond Blade, 6" x 0.014" x ⅝" hole, fine grit, medium concentrationeach
- 812-326-5** Diamond Blade, 6" x 0.014" x ⅝" hole, medium grit, medium concentrationeach
- 812-630** Diamond Blade for ceramics, composites, 6" x 0.019" x ⅝" holeeach
- 812-632** Diamond Blade for geological use, 6" x 0.020" x ⅝" holeeach
- 812-640** Borazon Blade for Nickel and Cobalt alloys, 6" x 0.019" x ⅝" holeeach

■ Cutting Fluid, Soluble Oil (recommended)

SO type, water base, anti-corrosive, mix 1:40 water

- 812-650** Cutting Fluid, Soluble Oil1 quart
- 812-653** Cutting Fluid, Soluble Oil1 gallon

■ Cutting Fluid, Non-soluble Oil

- 812-656** Cutting Fluid, Non-soluble Oil1 quart
- 812-657** Cutting Fluid, Non-soluble Oil1 gallon

■ Dressing Sticks

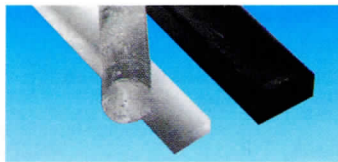
- 812-420** Dressing Stick for Diamond Bladeseach
- 812-422** Dressing Stick for Abrasive Bladeseach



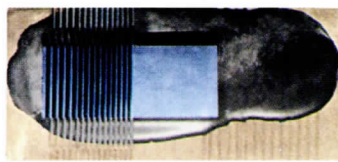
Sample Mounting Adhesives

mounting adhesive for temporary mounting of products that require dicing, polishing and other machining processes in preparation of samples for materials science microscopy examinations

Crystalbond™ Mounting Adhesives



Crystalbond™ 509, 555 and 590



Crystalbond™ 509 bonds an advanced ceramic which is diced into 25-50 mil sections.

Wash away adhesives are ideal for temporary mounting of products that require dicing, polishing and other machining processes. They exhibit high bond strength and adhere readily to metals, glass and ceramics by melting with heat. When processing is complete, the adhesives are removed by reheating and cleaning with environmentally friendly cleaning agents. ⓘ

Typical Applications:

- Machining advanced ceramics
- Lapping and polishing optical components
- Dicing ceramic substrates and semiconductor wafers
- Dicing ferrites, glasses and piezoelectrics
- Dicing metal and optical single crystals
- Mounting cross-sections for electron microscopy
- Backfilling components for temporary mechanical support

Crystalbond™ 509 Provides excellent adhesion and minimizes clogging of diamond tools compared to waxes. They are transparent in thin cross-sections. Soluble in acetone, odorless, non-flammable, biodegradable and may be rinsed in water.

Crystalbond™ 555 & 555-HMP A low melting point adhesive for moderate stress machining processes. It is transparent in thin cross-sections and is soluble in hot water.

Crystalbond™ 590 A high strength, resilient adhesive system, ideal for doing miniature and tall parts. It is soluble in methanol or IPA.

Product No.	509	555	555-HMP	590
Trade Name	Crystalbond™	Crystalbond™	Crystalbond™	Crystalbond™
Form	Stick	Stick	Stick	Stick
Size	7/8"Ø x 7"	1/2" x 1 X 7"	1/2" x 1 X 7"	5/8" x 1-1/4 x 7-1/2"
Weight	90 gr/stick	68 gr/stick	68 gr/stick	227 gr/stick
Flow Point °F (C°)	250°F (121°C)	120°F (48°C)	150°F (66°C)	302°F (150°C)
Viscosity	6,000	500	500	9,000
Color	Clear/Amber	White	White	Brown
Solvent	509-S or acetone	509-S or hot water	509-S or hot water	509-S or IPA

Crystalbond™ Adhesive Stick Ordering Information

- 821-1** Crystalbond™ 509-1, 90 gr, light ambereach
821-3 Crystalbond™ 509-3, 90 gr, light cleareach
821-2 Crystalbond™ 555, 68 greach
821-6 Crystalbond™ 555-HMP, 68 greach
821-4 Crystalbond™ 590, 227 greach

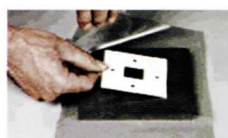
Wafer-Bond™ 559 Mounting Adhesive



Wafer-Bond™ 559 A clear adhesive on a plastic film that is ideal for holding silicon wafers, alumina, or glass substrates for scribing. No heating is required; just remove the paper backing to expose the adhesive layer, position the wafer sub-

strate on the film and press down with firm pressure to insure adhesion. A vacuum manifold or mechanical device may be used to hold wafer/plastic film during dicing or scribing. After dicing or scribing, acetone or MEK may be used to separate the specimen from the Wafer-Bond™ 559.

821-7 Wafer-Bond™ 559, .005" x 10" x 10" sheets pkg/10



Wafer-Mount™ 562 Mounting Adhesive

Thermoplastic white film adhesive with good adhesive properties. Ideal for

mounting thin, fragile substrates for which a predictable film thickness is required. Flow point is 200°F (93°C). Soluble in 562-S Stripper. A non-flammable, biodegradable, water-rinsable solvent.

821-8 Wafer-Mount™ 562, .003" x 8" x 10" sheets pkg/10

Wafer-Mount™ 562-S Stripper

Remove Wafer-Mount™ and other polymer coatings. Environmentally-safe, low evaporation rate, water rinsable, non-flammable, biodegradable and non-reactive with metals. Recommended for use in an ultrasonic cleaner. Rinse with warm water. Use with protective gloves, eye goggles and ventilation or fume hood. M

821-9 Wafer-Mount™ 562-S Stripper, 1 lb.each

M-BOND™ 610 Adhesive

ion milling, cross-sectioning



This is a non-conductive two-component, solvent-thinned, epoxy-phenolic adhesive for high performance applications. It is chemically resistant and provides a thin layer of glue which has good ion milling properties. It has low viscosity and is extremely thin, with minimum creep, hysteresis and linearity problems. Solids content is 22%. It

is an excellent adhesive for mounting samples for TEM dimpling and bonding of samples to TEM grids for imaging or FIB.

Operating temperature range, short term, is -269° to +370°C (-452 to 698°F); long term, -269° to +260°C (-452 to 500°F).

Elongation can occur at +24°C (3%). This may be the widest temperature range general-purpose adhesive that is available.

A kit contains: 4 bottles (14g each) Resin; 4 bottles (11g each) Curing Agent; 4 brush caps for dispensing mixed adhesives; 4 disposable mixing funnels and instructions.

M-BOND™ Adhesive M; M-BOND™ Adhesive Curing Agent M

16039 M-Bond™ 610, complete kiteach

M = MSDS on web page ⓘ = Tech Note on web page

■ Epoxy Bond 110



Epoxy Bond 110 is a very low viscosity, hard and fast-curing epoxy with excellent bonding characteristics. A unique feature of Epoxy Bond 110 is the red color that appears on curing. Cure by color instead of time. It is a reactive system only when heat is applied. It has good adhesion to many materials including metals, ceramics, glass and most plastics. Use for IC Cover Slip Technique when IC does not have passivation layer, when rounding occurs during cross-sectioning, or for bond pad protection.

Part A ; Part B

16028 Epoxy Bond 110each

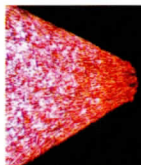
■ Loctite® 460 Sample Bonding Adhesive



Loctite® 460 is a fast curing, thin glue which can be used as an alternative to wax for mounting samples to glass for TEM/FIB Thinning. Soluble in acetone.

16029 Loctite® 460 Sample Bonding Adhesive, 20geach

■ Compression Mounting Powders



Fina-Met mounted sample showing adhesion at 140x >

Fina-Met is a very fine glass-filled powder. It has superior adhesion qualities, excellent flow characteristics and tough grinding properties. It is molded at the same pressure as bakelite. Fina-Met has been well accepted by our most demanding customers.

813-95 Fina-Met Powder, 5 lbs.each

813-97 Fina-Met Powder, 50 lbs.each

Phenolic Preforms

813-120 Phenolic Preform 1-1/4", Greenpkg/100

Phenolic Powders

813-130 Phenolic Powder, Black, 5 lbs.each

813-130-2 Phenolic Powder, Black, 25 lbs.each

813-134 Phenolic Powder, Red, 5 lbs.each

813-134-2 Phenolic Powder, Red, 25 lbs.each

813-138 Phenolic Powder, green, 5 lbs.each

813-144 Phenolic Powder, green/brown, 5 lbs.each

Specialty Mounting Powders

813-146 Phenolic Short Glass Fill, coarse, 5 lbs.each

813-148 Diallyl Pthalate Powder, medium, 5 lbs.each

813-152 Copper Fill Lucite™ Powder, 1 lb.each

813-156 Epoxy Mount Powder, black, 4 lbs.each

813-158 Epoxy Mount Powder, black, 25 lbs.each

813-160 Transoptic Powder, Lucite™, Transparent, 5 lbs.each

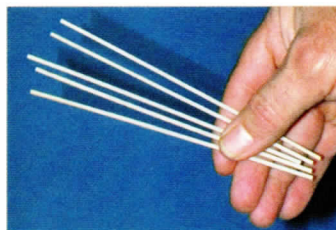
■ Conducto-mount



Graphite filled, conductive, compression mount material for hot embedding. Ideal for SEM, EDS/WDS and electro polishing applications. Hard embedding material with low electrical resistance and excellent edge retention.

813-400 Conducto-mount, black, 1 lb.each

■ Round Wooden Applicator Sticks



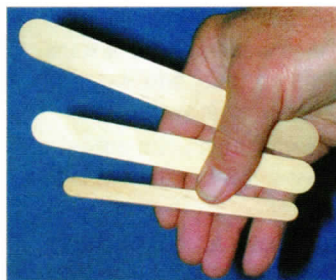
Applicator sticks made of birch wood, natural, not treated with chemicals.

Size: 2.4 x 150mm (3/32 x 6")

128-2 Round, Wooden Applicator Sticks, plainpkg/1000

■ Stirring Sticks

depressor type stick



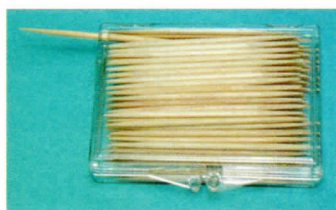
Mix, stir, scrape. Hardwood depressors provide strength and a clean, smooth finish. Made of white birch with a wax finish.

128-4 Wood Stirring Sticks, Medium, 5/8"W x 5-1/2"L (16 x 140mm)pkg/100

128-5 Wood Stirring Sticks, Small, 3/8"W x 4-1/2"L (10 x 114mm)pkg/1000

128-6 Wood Stirring Sticks, Large, 3/4"W x 6"L (19 x 152mm)pkg/500

■ Wooden Picks



Cleaned, packaged in a clear dispenser with exit hole to keep the picks clean. Useful for picking, cleaning, sorting and holding.

Double-pointed, 65mm L (2-1/2").

11620 Wooden Picksbox/100

= MSDS on web page

■ Round Silicone Rubber Molds, Reusable, White



Reusable molds for cold embedding made from sturdy, yet flexible white silicone. Special formulation ensures easy removal without the use of release agents. Smooth surface for identification of samples in clear resins; much smoother than rubber molds. Does not deform and holds shape to produce round embedding over and over again. Available in 1", 1-1/4" and 1-1/2" diameter (25.4, 31.8 and 38.1mm). All molds are 1" (25.4mm) high with 3/4" (19mm) internal depth.

- 813-172** Round Silicone Rubber Mold, white, 1" diameter (25.4mm)pkg/10
- 813-174** Round Silicone Rubber Mold, white, 1-1/4" diameter (31.8mm)pkg/10
- 813-176** Round Silicone Rubber Mold, white, 1-1/2" diameter (38.1mm)pkg/10
- 813-177** 2" diameter (50.5mm)pkg/10

■ Round Silicone Rubber Mold, Reusable, Blue

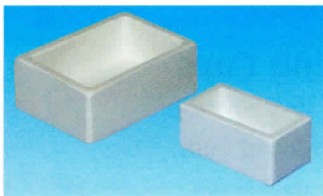


Reusable 1-1/4" diameter silicone mold for cold embedding. Sturdy blue silicone for easy removal of embedded mounts.

1" high with 3/4" internal depth.

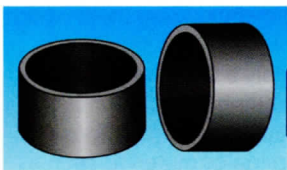
- 813-173-B** Round Silicone Rubber Mold, blue, 1-1/4" diameterpkg/10

■ Rectangular Silicone Rubber Molds, Reusable, White



Both sizes are 1" high with 3/4" internal depth.

- 813-183** Rectangular Silicone Rubber Mold, white, 2-1/4" x 1"pkg/5
- 813-184** Rectangular Silicone Rubber Mold, white, 3" x 2"each



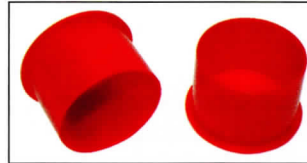
■ Phenolic Ring Molds

- 813-183** Phenolic Ring Mold, 1"pkg/10
- 813-187** Phenolic Ring Mold, 1-1/4"pkg/10
- 813-189** Phenolic Ring Mold, 1-1/2"pkg/10



■ 2-Part Plastic Molds

- 813-165** 2-Part Plastic Mold, 1"pkg/12
- 813-167** 2-Part Plastic Mold, 1-1/4"pkg/12
- 813-169** 2-Part Plastic Mold, 1-1/2"pkg/12



■ Protective Caps for Finished Samples

- 813-230** Mount Caps, 1-1/4"pkg/50

■ Metal Mounting Clips



Ideal for holding thin samples for cross sectioning. Can be used for hot and cold embedding.

- 813-210** Metal Mounting Clipspkg/100

■ Plastic Mounting Clips



For cold clear embedding applications with epoxy or polyester. Different colors for easy sample location.

- 813-214** Plastic Mounting Clipspkg/100

■ Multiclips



Plastic clips for holding up to five small and thin sections.

- 813-213** Plastic Mounting Clipspkg/100

■ PELCO® 2-Hour and 24-Hour Epoxy

Mount Kits for optical clarity, high hardness, low viscosity and good adhesion



PELCO® 2-Hour Epoxy Mount Kit

The PELCO® Epoxy Mount Kit uses a cold embedding material designed for metallography, ceramography, geology and petrology samples. Used for light microscopy, scanning electron

microscopy and micro probe analysis. It has low viscosity, low exotherm reaction and low shrinkage.

It can be used in conjunction with vacuum impregnation to ensure complete and void-free embedding. The cured resin is extremely hard, optically clear, and has excellent bond strength. It gives excellent polish and edge retention to the sample. Polymerization time is 2 hours at 77° F (25° C). Mixing ratio is 2:1 per volume (resin 2 parts to hardener 1 part). ⓘ



Example: Circuit Board encapsulated using the PELCO® Epoxy Mount Kit. The clear resin allows for easy identification of sample.

PELCO® 24-Hour Epoxy Mount Kit

The PELCO® 24-Hour Epoxy Mount Kit has the same optical clarity, high hardness, low shrinkage and low viscosity as our 2-Hour epoxy kit, but with a much longer pot life (up to one hour) and slower curing (24 hours). This allows for embedding larger batches in one charge and better impregnation of porous samples. The longer pot life gives ample time to remove trapped gas and to avoid air bubbles in the embedding.

It can be used with vacuum or pressure impregnation to remove trapped gas. The cured resin is extremely hard, optically clear and has excellent bond strength. It gives excellent edge retention during grinding and polishing of metallographic samples. Polymerization time is 24 hours @77°F (25°C). Mixing ratio is 3:1 per volume (resin 3 parts to hardener 1 part). ⓘ

The Kits Contain the Following items:

813-501 PELCO® Epoxy Resin, 1 gallon (3,785ml)

813-503 PELCO® Epoxy Pump, set of 2

128-4 Mixing Sticks, pkg/100

12904-20 Tri-Stir Beakers, 100ml, with pouring spout, pkg/20

12906-20 Tri-Stir Beakers, 250ml, with pouring spout, pkg/20

813-500 PELCO® 2-Hour Epoxy Mount Kit includes:

813-504 PELCO® Fast Cure Hardner (2Hour),0.5 gal (1,892ml)

813-510 PELCO® 24-Hour Epoxy Mount Kit Includes:

813-514 PELCO® Slow Cure Hardner (24Hour)

□ U M H◆F

Components and Supplies

813-501 PELCO® Epoxy Resin, 1 gallon (3,785ml) . . . each

813-510 PELCO® Epoxy Resin, 0.5 gallon (1,892ml) □ U M H◆F each

813-504 PELCO® Fast Cure Hardener (2-Hour), 0.5 gallon (1,262ml). each

813-514 PELCO® Slow Cure Hardener (24-Hour), 0.33 gallon (1.262ml) □ U M H◆F each

813-505 PELCO® Fast Cure Hardener, 1 quart (946ml) □ U M H◆F each

813-515 PELCO® Slow Cure Hardener, 0.166 gallon each (631ml)

128-4 Mixing Sticks pkg/100

12904-20 Tri-Stir P.E. Beakers, 3 Oz. (100ml). pkg/20

12906-20 Tri-Stir P.E. Beakers, 8 Oz. (250ml). pkg/20

■ PELCO® Epoxy Pump Set



The pump screws directly onto the gallon, ½ gallon or quart bottles of resin and hardener allowing for quick, exact and clean dispensing. The pumps dispense one fluid ounce per stroke. Inserts that limit the stroke to ¼ oz. or ½ oz. are included to allow for correct ratio of resin to hardener.

For example: one pump would be set at full stroke for 1 oz. of resin and the other for ½ oz. of hardener. If 3 oz. are required, two

strokes of each pump will deliver the correct ratio.

813-503 PELCO® Epoxy Pump, set/2 each



■ Resin Cups

Disposable paper cups, 120cc (4 fl oz.), pkg/100

813-203 Resin Cups, 120ccpkg/100



■ Plastic Mixing Cups

Plastic Mixing Cups, 120cc (4 fl oz.)

813-205 Plastic Mixing Cups, 120mlpkg/25

■ Silicone Mold Release



This superior formulation of silicone mold release is particularly useful for easy release of cold or hot embedding molds. Cured resin embedding can be easily removed from plastic embedding mold when a thin layer of silicone mold release is sprayed on the inside of the mold. Apply a thin coat before loading sample and embedding powder (phenolic, lucite, epoxy or diallyl phthalate) in hot embedding presses. Also prevents sticking of materials such as plastics, rubber and waxes to molds. Contains no CFC, HCFC or chlorinated solvents.

813-206 Silicone Mold Release, 341g (12 oz.)each



■ PELCO Kleenasonic™ CDC Ultrasonic Cleaning Powder Concentrate

PELCO Kleenasonic™ CDC is a high performance, heavy-duty ultrasonic yet environmentally friendly cleaning powder. Fast acting, long lasting and saves costs, space and time. It is easy to handle, completely biodegradable, odorless, ammonia-free and non-flammable. PELCO Kleenasonic™

CDC cleans and degreases and can be used for removing oils, greases, fingerprints, dust, packaging particulates, soils and buffing and polishing compounds (makes 75 gal). ■ I; ■ M ■ H ■ F

17386 PELCO Kleenasonic™ CDC, 2 lb. each

■ PELCO® "Air-Out" Vacuum System



For removal of air bubbles from the epoxy resin mixture providing enhanced bonding and embedding quality.

2246-1 PELCO® All-Clear Vacuum Desiccator, Large . each

2246-1 Specifications		
	mm	mm
Flange O.D.	10- ³ / ₄	273
Inside Dia.	9- ⁷ / ₁₆	240
Takes Plate	No. 5	230
Overall Height	12- ¹ / ₈	311
Maximum Clearance above plate	7- ³ / ₄	197

3436 Oil-less Diaphragm Vacuum Pump, 115V, 60Hz each

3436-220 Oil-less Diaphragm Vacuum Pump, 220V, 50/60Hz each

3436 and 3436-220 Includes: Internal filter and muffler, pressure and vacuum gauges and regulators, rubber feet, carrying handle, hose nipples and vacuum hose.

813-600 PELCO® "Air-Out" Vacuum System, 115V each

813-600-220 PELCO® "Air-Out" Vacuum System, 220V each

PELCO® "Air-Out" Vacuum System Includes: 3436 or 3436-220 Oil-less Diaphragm Vacuum Pump and 2246-1 All-Clear Vacuum Desiccator, Large

■ 3436 Diaphragm Vacuum Pump



For removal of air bubbles from the epoxy resin mixture providing enhanced bonding and embedding quality.

3436 Oil-less Diaphragm Vacuum Pump, 115V, 60Hz. each

3436-220 Oil-less Diaphragm Vacuum Pump, 220V, 50/60Hz . . each

3436 and 3436-220 Includes: Internal filter and muffler, pressure and vacuum gauges and regulators, rubber

feet, carrying handle, hose nipples and vacuum hose.

3436-10 Replacement Diaphragm for 3436 each

3436-20 Service Kit for 3436. each
Service Kit contains: filter elements, screws, leaf valves, valve limiter, valve retainer and cover gasket

92490-253 1/4" ID Silicone Vacuum Hose 3 ft.

92490-256 1/4" ID Silicone Vacuum Hose 9 ft.
Thick walled silicone vacuum hose with 1/4" (6.35mm) inside diameter and 1/2" (12.7mm) outside diameter.

■ PELCO® Mini Hot Vac Vacuum Desiccator



vacuum and heat can act as a desiccator or mini-drying station

An inexpensive way to warm embedding plastics while removing gas bubbles. The aluminum base is placed on a laboratory heating plate. A vacuum can be drawn through a provided porthole in the base-plate. A digital thermometer measures the plate temperature. Can be used up to 120°C (248°F).

What a handy, inexpensive and effective way to cure embeddings or dry samples while degassing them! Inside dimensions are 6" Dia. x 3" H (15.3 x 7.6cm).

2245 PELCO® Mini Hot Vac Vacuum Desiccator each

Hot Plate only - no Magnetic Stirrer

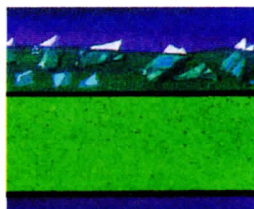
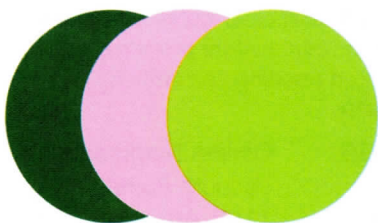
3234 P40-S Hot Plate, 115V each

3234-230 P40-S Hot Plate, 230V each

For more information on Hot Plates, with and without Magnetic Stirrers go to page 300.

■ = MSDS on web page
■ = Tech Note on web page
■ = HAZARD Fee may apply*

3M™ Imperial™ Diamond Lapping Film



cross-section illustration



surface micrograph

Imperial™ Diamond Lapping Film offers a repeatable, precision finish on extremely hard materials. It combines micron-graded diamond particles, a resin bonding system and a highly uniform 3mil (0.08mm) polyester film backing for a cleaner, more consistent alternative to diamond compounds or slurries. Available with Plain back or PSA (pressure sensitive adhesive).

Applications: carbides, ceramics, high-hardness metals, fiber optic connectors, magnetic heads, and metallurgical testing

3M™ Diamond Lapping Discs, Plain Back, 8" (203mm), NH

Prod. No.	Material	Back	µm	Color	pkg
814-422	8" Diamond	Plain	30	●	5
814-426	8" Diamond	Plain	15	●	5
814-428	8" Diamond	Plain	9	●	5
814-430	8" Diamond	Plain	6	●	5
814-432	8" Diamond	Plain	3	●	5
814-436	8" Diamond	Plain	1	●	5
814-438	8" Diamond	Plain	0.5	●	5
814-440	8" Diamond	Plain	0.1	●	5

3M™ Diamond Lapping Discs, PSA Back, 8" (203mm), NH

Prod. No.	Material	Back	µm	Color	pkg
816-462	8" Diamond	PSA	30	●	5
816-466	8" Diamond	PSA	15	●	5
816-468	8" Diamond	PSA	9	●	5
816-470	8" Diamond	PSA	6	●	5
816-472	8" Diamond	PSA	3	●	5
816-476	8" Diamond	PSA	1	●	5
816-478	8" Diamond	PSA	0.5	●	5
816-480	8" Diamond	PSA	0.1	●	5

3M™ Diamond Lapping Discs, Plain Back, 12" (304.8mm), NH

Prod. No.	Material	Back	µm	Color	pkg
814-754	12" Diamond	Plain	30	●	3
814-756	12" Diamond	Plain	15	●	3
814-758	12" Diamond	Plain	9	●	3
814-760	12" Diamond	Plain	6	●	3
814-762	12" Diamond	Plain	3	●	3
814-764	12" Diamond	Plain	1	●	3
814-766	12" Diamond	Plain	0.5	●	3
814-768	12" Diamond	Plain	0.1	●	3

3M™ Diamond Lapping Discs, PSA Back, 12" (304.8mm), NH

Prod. No.	Material	Back	µm	Color	pkg
814-778	12" Diamond	PSA	30	●	5
814-780	12" Diamond	PSA	15	●	5
814-782	12" Diamond	PSA	9	●	5
814-784	12" Diamond	PSA	6	●	5
814-786	12" Diamond	PSA	3	●	5
814-788	12" Diamond	PSA	1	●	5
814-790	12" Diamond	PSA	0.5	●	5
814-792	12" Diamond	PSA	0.1	●	5

Premium Al₂O₃ and SiC Lapping Discs

Premium, precision lapping discs for producing a super-fine, super-consistent finish. A high strength polyester film backing provides a uniform base for a coating of micrograded aluminum oxide or silicon carbide particles that are uniformly dispersed for greater finishing efficiency. A carefully controlled resin bond ensures a consistent, reliable and repeatable finish. Clean room coating and converting ensures contaminant-free products. 3mil (0.08mm) polyester film backing. Available with Plain back or PSA. **Applications:** metals, plastics, metallography, ceramics, geological specimens, fiber optics.

3M™ Aluminum Oxide Lapping/Polishing Discs, Plain Back, 8" (203mm), NH

Prod. No.	Material	Back	µm	Color	pkg
815-310	8" Al ₂ O ₃	Plain	30	●	25
815-312	8" Al ₂ O ₃	Plain	12	●	25
815-314	8" Al ₂ O ₃	Plain	9	●	25
815-316	8" Al ₂ O ₃	Plain	5	●	25
815-318	8" Al ₂ O ₃	Plain	3	●	25
815-320	8" Al ₂ O ₃	Plain	1	●	25
815-322	8" Al ₂ O ₃	Plain	0.3	○	25
815-324	8" Al ₂ O ₃	Plain	0.05	○	25

■ 3M™ Aluminum Oxide Lapping/Polishing Discs, PSA Back, 8" (203mm), NH

Prod. No.	Material	Back	μm	Color	pkg
815-330	8" Al ₂ O ₃	PSA	30	●	25
815-332	8" Al ₂ O ₃	PSA	12	●	25
815-334	8" Al ₂ O ₃	PSA	9	●	25
815-336	8" Al ₂ O ₃	PSA	5	●	25
815-338	8" Al ₂ O ₃	PSA	3	●	25
815-340	8" Al ₂ O ₃	PSA	1	●	25
815-342	8" Al ₂ O ₃	PSA	0.3	○	25
815-344	8" Al ₂ O ₃	PSA	0.05	○	25

■ Double Sided Adhesive Discs



With the double sided adhesive discs any Plain back grinding, lapping and polishing disc can be turned into a PSA type disc. The double sided adhesive layer ensures flat mounting and prevents "slipping" of the discs, thus providing better finishing results. Removal of the adhesive of PSA backing is made easy with the 3M™

Adhesive Remover, Prod. No. 80924

817-190 8" Double Sided Adhesive Discspkg/10

817-192 10" Double Sided Adhesive Discspkg/10

817-194 12" Double Sided Adhesive Discspkg/10

■ 3M™ Silicon Carbide Lapping Discs, Plain Back, 8", NH

Prod. No.	Material	Back	μm	Color	pkg
815-356	8" SiC	Plain	30	●	25
815-358	8" SiC	Plain	15	●	25
815-360	8" SiC	Plain	9	●	25
815-362	8" SiC	Plain	5	●	25

■ 3M™ Silicon Carbide Lapping Discs, PSA Back, 8", NH

Prod. No.	Material	Back	μm	Color	pkg
815-372	8" SiC	PSA	30	●	25
815-374	8" SiC	PSA	15	●	25
815-376	8" SiC	PSA	9	●	25
815-378	8" SiC	PSA	5	●	25

3M™ Trizact™ Film, Aluminum Oxide

get your job done faster with a superior finish using Trizact™ Film



Ideal for damp finishing solid surfaces, glass defect repair and acrylic solid surface finishing. 3M™ Trizact™ consists of aluminum oxide particles having tiny precisely shaped pyramids reproduced on a polyester film backing. Also: metals, plastics, composites, ceramography, metallography. The pyramids wear away evenly and continually expose new abrasives. Fewer processing steps can be taken, a higher gloss level achieved and effective surface leveling takes place. Little wear is required and there is easy "touchup". Waterproof backing. New, smaller packaging.

■ 3M™ Trizact™ Film, Aluminum Oxide Discs, PSA Back, 8" (203mm), NH

Prod. No.	Material	Back	μm	Color	Pkg
816-206	8" Al ₂ O ₃	PSA	35	●	5
816-204	8" Al ₂ O ₃	PSA	20	●	5
816-202	8" Al ₂ O ₃	PSA	10	●	5
816-200	8" Al ₂ O ₃	PSA	5	●	5

■ 3M™ Trizact™ Film, Aluminum Oxide Discs, Hookit II™ Backing, 8" (203mm), NH

Prod. No.	Material	Back	μm	Color	Pkg
816-216	8" Al ₂ O ₃	Hookit II	35	●	5
816-214	8" Al ₂ O ₃	Hookit II	20	●	5
816-212	8" Al ₂ O ₃	Hookit II	10	●	5
816-210	8" Al ₂ O ₃	Hookit II	5	●	5

■ 3M™ Diamond Polishing Cloth Belts



High diamond concentration, resin bonded to a durable cloth backing; helps optimize finishing operations. Compared to bonded wheels and conventional abrasives, 3M™ Diamond Cloth can provide a superior finish,

fewer steps, reduced process time and long life. The water-resistant backing performs well in both wet and dry applications. Good for many difficult-to-finish materials: Thermal spray parts; Ceramics; Decorative glass; Precious/ semi-precious stones; Composites; HVOF coatings; Chilled iron; Non-ferrous metal; Engineered stone.

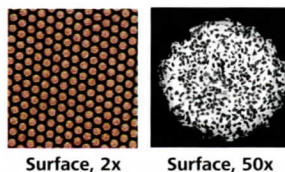
814-520 3M™ 652WY Diamond Polishing Cloth Belt, 1-1/2" x 18-15/16", 3000 mesh (5μm)each

814-522 3M™ 652WY Diamond Polishing Cloth Belt, 1-1/2" x 18-15/16", 8000 mesh (3μm)each

814-524 3M™ 652WY Diamond Polishing Cloth Belt, 1-1/2" x 18-15/16", 50000 mesh (0.5μm)each

3M™ Flexible Diamond Discs, Polyester Carrier Film

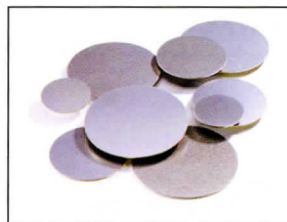
Specially developed diamond discs for use on hard and extremely hard materials to achieve flat, fast action precision grinding results. Precision-graded diamond particles anchored in electroplated nickel pellets are bonded to a highly uniform and flexible backing for consistent results. The diamond discs present a cleaner alternative to diamond compounds or slurries and do not require "loading" with diamond paste. The open and raised dot pattern provides more efficient cutting action and allows for quick displacement of waste material. Ideal for grinding hard metals, steel, glass-filled composites, glass, stone, ceramics, carbides, etc. PSA (Pressure Sensitive Adhesive) back, available in 8" (203mm), 10" (254mm) and 12" (305mm) diameter discs. Longer lasting and more precise alternative to silicon carbide or aluminum oxide abrasives. M= Metal Plated.



Recommendations for Controlled Storage of 3M™ Coated Abrasives

Coated abrasive products require care in storage as they are affected by atmospheric conditions. To obtain the best possible efficiency without experiencing any handling difficulties, the ideal storage conditions for all coated abrasive products are a constant temperature from 60° to 80°F (16° to 27°C) and a controlled relative humidity from 35% to 50%. If these conditions are not practical, leave the material in its original sealed containers, stored under conditions as comparable to the operating conditions as possible, avoiding extremes up to the moment of use.

■ 3M™ Diamond Metal Bond Abrasives



durable, long lasting, precision cutting discs for heavy stock removal, shaping and lapping of hard-to-grind materials

Precisely graded diamond particles electroplated on a 1/16" (1.58mm) thick metal plate (brass) with an 8" (203mm) diameter. These discs can be used on lapping machines with rigid, flat support plates and with a lubricant to prolong disc life. They can be used for flat lapping, ceramics, metallurgical testing, sharpening carbide tools, gem faceting and grinding glassy materials that generate erosive swarf. The metal bonded discs are available Plain or PSA (for secure attachments to the platen backing).

■ 3M™ Flexible Diamond Discs, Metal Coated Polyester, PSA Back, 8" (203mm)

Prod. No.	Material	Back	µm	Color	Pkg
814-10	8" Diamond	PSA	M250	●	1
814-12	8" Diamond	PSA	M125	●	1
814-14	8" Diamond	PSA	M74	●	1
814-16	8" Diamond	PSA	M40	●	1
814-18	8" Diamond	PSA	M20	○	1
814-20	8" Diamond	PSA	M10	●	1

■ 3M™ Flexible Diamond PSA Cloth Discs, Metal Plated, 10" (254mm)

Prod. No.	Material	Back	µm	Color	Pkg
814-44	10" Diamond	PSA	M250	●	1
814-46	10" Diamond	PSA	M125	●	1
814-48	10" Diamond	PSA	M74	●	1
814-50	10" Diamond	PSA	M40	●	1
814-52	10" Diamond	PSA	M20	○	1
814-54	10" Diamond	PSA	M10	●	1

■ 3M™ Flexible Diamond PSA Cloth Discs, Metal Plated, 12" (305mm)

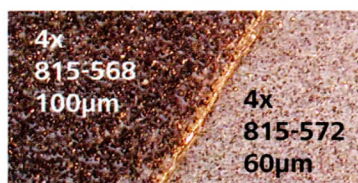
Prod. No.	Material	Back	µm	Color	Pkg
814-70	12" Diamond	PSA	M250	●	1
814-72	12" Diamond	PSA	M125	●	1
814-74	12" Diamond	PSA	M74	●	1
814-76	12" Diamond	PSA	M40	●	1
814-78	12" Diamond	PSA	M20	○	1
814-80	12" Diamond	PSA	M10	●	1

Prod. No.	Description	Back	Grade
6MB1 Diamond Metal Bond, 1/16" thick Brass Plate, Plain			
814-146	8" Diamond Metal Bond	Plain	220 grit
814-148	8" Diamond Metal Bond	Plain	100 grit
814-150	8" Diamond Metal Bond	Plain	45µm
814-151	8" Diamond Metal Bond	Plain	30µm
814-152	8" Diamond Metal Bond	Plain	15µm
814-153	8" Diamond Metal Bond	Plain	6µm
6MB8 Diamond Metal Bond, 1/16" thick Brass Plate, PSA			
814-154	8" Diamond Metal Bond	PSA	220 grit
814-156	8" Diamond Metal Bond	PSA	100 grit
814-158	8" Diamond Metal Bond	PSA	45µm
814-159	8" Diamond Metal Bond	PSA	30µm
814-160	8" Diamond Metal Bond	PSA	15µm
814-162	8" Diamond Metal Bond	PSA	6µm

continued on next page

3M™ Microfinishing Film

The Microfinishing Film is made of premium, micron-graded silicon carbide or aluminum oxide particles resin bonded on a 3 mil, polyester film backing. The particles are electrostatically oriented for better cutting action. A premium, fast cutting abrasive that provides precise, consistently uniform, close tolerance finishing. The polyester film backing does not swell when using water. For use on metal, fiberglass, plastic wood and solid surface composites. Can be used wet or dry. A high quality, longer lasting and more precise alternative to grinding paper. Preferred grinding film for metallography, ceramography and petrology surface preparation.



3M™ Microfinishing Film, Silicon Carbide Grinding Discs, Plain Back, 8" (203mm), NH

Prod. No.	Material	Back	µm	Grit	pkg
815-552	8" SiC	Plain	80	180	25
815-554	8" SiC	Plain	60	220	25
815-556	8" SiC	Plain	40	320	25
815-558	8" SiC	Plain	30	400	25
815-560	8" SiC	Plain	15	600	25

3M™ Microfinishing Film, Silicon Carbide Grinding Discs, PSA Back, 8" (203mm), NH

Prod. No.	Material	Back	µm	Grit	pkg
815-568	8" SiC	PSA	100	150	25
815-570	8" SiC	PSA	80	180	25
815-572	8" SiC	PSA	60	220	25
815-574	8" SiC	PSA	40	320	25
815-576	8" SiC	PSA	30	400	25
815-578	8" SiC	PSA	15	600	25

Double Sided Adhesive Discs

With the double sided adhesive discs any Plain back grinding, lapping and polishing disc can be turned into a PSA type disc.

The double sided adhesive layer ensures flat mounting and prevents "slipping" of the discs, thus providing better finishing results. Removal of the adhesive of PSA backing is made easy with the 3M™ Adhesive Remover, Prod. No. 80924



817-190 8" Double Sided Adhesive Discspkg/10
817-192 10" Double Sided Adhesive Discspkg/10
817-194 12" Double Sided Adhesive Discspkg/10

3M™ Microfinishing Film, Aluminum Oxide Grinding Discs, Plain Back, 8" (203mm), NH

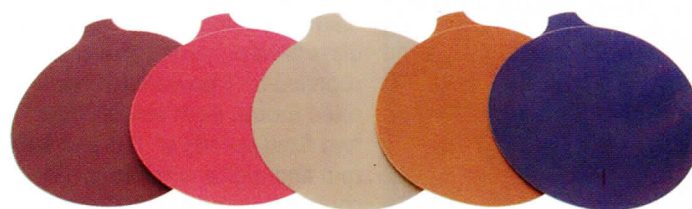
Prod. No.	Material	Back	µm	Grit	pkg
815-510	8" Al ₂ O ₃	Plain	100	150	25
815-512	8" Al ₂ O ₃	Plain	80	180	25
815-514	8" Al ₂ O ₃	Plain	60	220	25
815-516	8" Al ₂ O ₃	Plain	40	320	25
815-518	8" Al ₂ O ₃	Plain	30	400	25
815-520	8" Al ₂ O ₃	Plain	15	600	25

3M™ Microfinishing Film, Aluminum Oxide Grinding Discs, PSA Back, 8" (203mm), NH

Prod. No.	Material	Back	µm	Grit	pkg
815-532	8" Al ₂ O ₃	PSA	100	150	25
815-534	8" Al ₂ O ₃	PSA	80	180	25
815-536	8" Al ₂ O ₃	PSA	60	220	25
815-538	8" Al ₂ O ₃	PSA	40	320	25
815-540	8" Al ₂ O ₃	PSA	30	400	25
815-542	8" Al ₂ O ₃	PSA	15	600	25

3M™ Diamond 5" Lapping Discs

Type 662XWTH with PSA pressure sensitive adhesive back



Premium diamond abrasive with a 3 mil polyester backing, offering a cleaner, more consistent alternative to diamond compounds or slurries. Use to finish and polish hard to grind materials such as glass, ceramics, hardened metals, and composites.

Prod. No.	Material	Back	µm	Color	Pkg
816-398	ø5" Diamond	PSA	9	●	5
816-396	ø5" Diamond	PSA	6	●	5
816-394	ø5" Diamond	PSA	3	●	5
816-392	ø5" Diamond	PSA	1	●	5
816-390	ø5" Diamond	PSA	0.5	●	5

MATERIALS SCIENCE

Diamond Lapping Film; Diamond Lapping Discs; Grinder-Lapper-Polishers

■ 3M™ Diamond 5" Lapping Discs

Type 662XWTH as on previous page but with plain back

Premium diamond abrasive with a 3 mil polyester backing, offering a cleaner, more consistent alternative to diamond compounds or slurries. Use to finish and polish hard to grind materials such as glass, ceramics, hardened metals, and composites.

Prod. No.	Material	Back	µm	Color	Pkg
816-356	ø5" Diamond	Plain	9	●	5
816-358	ø5" Diamond	Plain	6	●	5
816-360	ø5" Diamond	Plain	3	●	5
816-362	ø5" Diamond	Plain	1.5	●	5
816-364	ø5" Diamond	Plain	1	●	5
816-366	ø5" Diamond	Plain	0.5	●	5

■ XP 810E and XP 820E Professional Grinder/Polishers



Designed for years of dependable service. These Professional 8" Grinder, Lapper, Polishers are ideally suited for grinding and polishing of metallographic, mineral and geological samples and cross sections. The housings are



made from non-corroding, strong glass filled polyester. Power is supplied by a powerful ¾ Hp rated motor. Both models have two fixed speeds of 150 and 300 rpm and digital variable speed control from 50 to 1000 rpm.

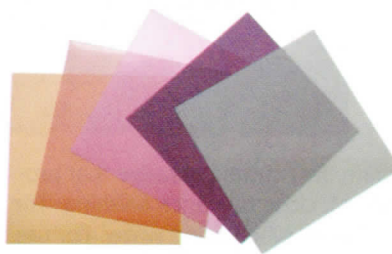
The 8" disks of the XP 810E/820E Grinder - Lapper - Polishers are of the drop-in type and can be easily exchanged for disks with other

grinding / lapping / polishing discs. (230V versions available)



- 812-100** XP 810E Professional Single Disc Grinder / Polisher, 115Veach
- 812-200** XP 820E Professional Dual Disc Grinder / Polisher, 115Veach
- 812-104** 8" Quick Exchange Disc for XP 810E / 820E .each

■ 3M™ Diamond Lapping Film in 4.5" Square Sheets Type 661X



The standard of 3M's premium diamond abrasive with a 3 mil polyester backing, offering a cleaner, more consistent alternative to diamond compounds or slurries. Use to finish and polish hard to grind materials

such as glass, ceramics, hardened metals, and composites.

Prod. No.	Description	µm	Color	pkg
816-322	4.5" Diamond	15	●	5
816-324	4.5" Diamond	6	●	5
816-326	4.5" Diamond	3	●	5
816-328	4.5" Diamond	1	●	5
816-330	4.5" Diamond	0.5	●	5

■ XP 8 Grinder - Lapper - Polisher



This compact 8" Grinder, Lapper, Polisher is well suited for manual working and finishing of embedded specimens using PSA backed grinding, lapping and polishing (cloths) discs. The housing is made from non-corroding sturdy plastic. The durable 1/4 HP motor has a variable speed control for 0-2000 rpm to select the optimum

speed for grinding or polishing. The XP 8 includes a flexible and variable water spout for grinding applications. Ideally suited for smaller labs and priced so that you can afford dedicated XP 8 grinding and polishing systems.

The 8" discs of the XP 8 Grinder - Lapper - Polisher are of the screwback type (leaving a flat surface on top) and can be easily exchanged for discs with other grinding / lapping / polishing discs.

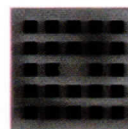
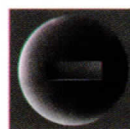


- 812-350** XP 8 Grinder, Lapper, Polisher, 115Veach
- 812-350-230** XP 8 Grinder, Lapper, Polisher, 230Veach
- 812-354** Additional 8" Disc for XP 8each

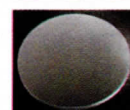
■ PELCO® Support Films and Coated Blanks

for
Transmission Electron
Microscopy

For More information
go to page 577.



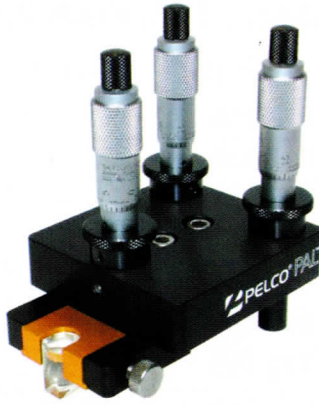
PELCO® Silicon Nitride Support Films;
PELCO® Silicon Dioxide Support Films;
PELCO® Holey Silicon Nitride Support
Films; PELCO® Nitride Coated 3mm
Discs (blanks)



■ Precision Angle Lapper (PAL™)



**PAL™ Precision Angle Lapper
with 3 Micrometers
Prod. No. 814-600**



**PAL™ Precision Angle Lapper
with 3 Non-Rotating Micrometers
Prod. No. 814-650**

- Precision Metallographic Angle Lapping and Thinning
- Sample Preparation for: Light Microscopy, Scanning Electron Microscopy, Atomic Force Microscopy
- Mechanical magnification of finite structural features
- Wedge sample preparation for TEM
- Mechanical slice sample preparation for focused ion beam thinning

PAL™ offers a unique combination of features including an intermediate sample mounting block, which facilitates the use of a regular upright optical microscope (instead of an inverted microscope) for monitoring the lapping process, an ergonomically designed baseplate. It also allows for an easy visual inspection of the specimen frontal and side views under a stereo microscope, an integrated leveling device for establishing a reference horizontal plane rapidly and accurately, optimized dimensions and overall tool weight to produce the ideal lapping conditions for a wide variety of applications.



Both Angle Lappers above include: Intermediate sample mounting block, 2 stainless steel specimen stubs, 2 Pyrex glass specimen stubs, stub grinding sleeve (to dress specimen stubs), counterweight, 3 Delrin feet, 10ml cyanoacrylate adhesive, carrying case and instructions.

Precision Angle Lapper in Carrying Case

- 814-600** PAL™ Precision Angle Lapper
with 3 Micrometerseach
- 814-650** PAL™ Precision Angle Lapper
with 3 Non-Rotating Micrometerseach

References:

Shaap F, Rimer F, 1997. An improved tool for wedge-polishing of materials for TEM, Mat. Res. Soc. Symp. Proc. Vol. 480, 181 - 185.

UltraMetrix: New Product, 1995. Precision Angle Lapper (PAL), Materials Microscopy (magazine), issue SR-95, Summer.

Sidorov MV, Smith DJ, 1996. Cross-Sectional Transmission Electron Microscopy of Si-Based Nanostructures, Mat Res Soc.

Premium Silicon Carbide Abrasive Discs, 8", 10", and 12" (203mm, 254mm, and 305mm)



Premium, waterproof silicon carbide abrasive discs designed for metallographic coarse and fine grinding of a wide variety of materials. This premium silicon carbide paper features select mineral grading, tough resin bonding and quality paper backing, resulting in durable, long-lasting paper with excellent uniform cutting properties that minimizes deformation and sample distortion. Available in Plain back and PSA back.

■ Premium Silicon Carbide Abrasive Discs, 8", Plain back

Prod. No.	Material	Back	µm	Grit	pkg
817-130	8" SiC	Plain	260	60	25
817-139	8" SiC	Plain	200	80	25
817-131	8" SiC	Plain	125	120	25
817-132	8" SiC	Plain	80	180	25
817-133	8" SiC	Plain	52	240	25
817-134	8" SiC	Plain	40	320	25
817-135	8" SiC	Plain	30	400	25
817-136	8" SiC	Plain	15	600	25
817-137	8" SiC	Plain	10	800	25
817-160	8" SiC	Plain	7	1000	25
817-138	8" SiC	Plain	5	1200	25

■ Premium Silicon Carbide Abrasive Discs, 8", PSA back

Prod. No.	Material	Back	µm	Grit	pkg
817-100	8" SiC	PSA	260	60	25
817-109	8" SiC	PSA	200	80	25
817-101	8" SiC	PSA	125	120	25
817-102	8" SiC	PSA	80	180	25
817-103	8" SiC	PSA	52	240	25
817-104	8" SiC	PSA	40	320	25
817-105	8" SiC	PSA	30	400	25
817-106	8" SiC	PSA	15	600	25
817-107	8" SiC	PSA	10	800	25
817-165	8" SiC	PSA	7	1000	25
817-108	8" SiC	PSA	5	1200	25

continued on next page

■ Premium Silicon Carbide Abrasive Discs, 10", Plain back

Prod. No.	Material	Back	µm	Grit	pkg
817-140	10" SiC	Plain	260	60	25
817-149	10" SiC	Plain	200	80	25
817-141	10" SiC	Plain	125	120	25
817-142	10" SiC	Plain	80	180	25
817-143	10" SiC	Plain	52	240	25
817-144	10" SiC	Plain	40	320	25
817-145	10" SiC	Plain	30	400	25
817-146	10" SiC	Plain	15	600	25
817-147	10" SiC	Plain	10	800	25
817-161	10" SiC	Plain	7	1000	25
817-148	10" SiC	Plain	5	1200	25

■ Premium Silicon Carbide Abrasive Discs, 10", PSA back

Prod. No.	Material	Back	µm	Grit	pkg
817-110	10" SiC	PSA	260	60	25
817-119	10" SiC	PSA	200	80	25
817-111	10" SiC	PSA	125	120	25
817-112	10" SiC	PSA	80	180	25
817-113	10" SiC	PSA	52	240	25
817-114	10" SiC	PSA	40	320	25
817-115	10" SiC	PSA	30	400	25
817-116	10" SiC	PSA	15	600	25
817-117	10" SiC	PSA	10	800	25
817-166	10" SiC	PSA	7	1000	25
817-118	10" SiC	PSA	5	1200	25

■ Premium Silicon Carbide Abrasive Discs, 12", Plain back

Prod. No.	Material	Back	µm	Grit	pkg
817-150	12" SiC	Plain	260	60	25
817-159	12" SiC	Plain	200	80	25
817-151	12" SiC	Plain	125	120	25
817-152	12" SiC	Plain	80	180	25
817-153	12" SiC	Plain	52	240	25
817-154	12" SiC	Plain	40	320	25
817-155	12" SiC	Plain	30	400	25
817-156	12" SiC	Plain	15	600	25
817-157	12" SiC	Plain	10	800	25
817-162	12" SiC	Plain	7	1000	25
817-158	12" SiC	Plain	5	1200	25

■ Premium Silicon Carbide Abrasive Discs, 12", PSA back

Prod. No.	Material	Back	µm	Grit	pkg
817-120	12" SiC	PSA	260	60	25
817-129	12" SiC	PSA	200	80	25
817-121	12" SiC	PSA	125	120	25
817-122	12" SiC	PSA	80	180	25
817-123	12" SiC	PSA	52	240	25
817-124	12" SiC	PSA	40	320	25
817-125	12" SiC	PSA	30	400	25
817-126	12" SiC	PSA	15	600	25
817-127	12" SiC	PSA	10	800	25
817-167	12" SiC	PSA	7	1000	25
817-128	12" SiC	PSA	5	1200	25

Polishing Cloths

A selection of premium polishing cloths for coarse and fine polishing of hard, soft and composite materials. Most cloths are available with plain or PSA backing for easy mounting on the polishing discs. The polishing cloths can be used with diamond compound, diamond spray or alumina suspension.



Hard Cloths

- Low resilience, (e.g. Woven Nylon)
- Used for rough and intermediate polishing

Soft Cloths

- High resilience
- Low nap (e.g. Rayon pile)
- Used for final polishing

■ Alpha-A Polishing Cloth, Plain and Adhesive Back



Popular final polish, low nap cloth used with diamond or alumina for most materials.

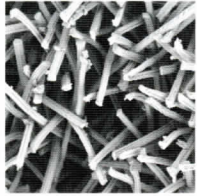
micrograph= 50x

- 816-16** Alpha-A Polishing Cloth, 8" plainpkg/10
- 816-17** Alpha-A Polishing Cloth, 8" PSApkg/10
- 816-18** Alpha-A Polishing Cloth, 10" plainpkg/10
- 816-19** Alpha-A Polishing Cloth, 10" PSApkg/10

continued on next page

Polishing Cloths *continued*

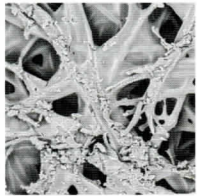
■ Alpha-B Polishing Cloth, Plain and Adhesive Back



Low nap mylar backed variation of Alpha-A for final polishing of most materials, not used with alcohol thinners.
 micrograph= 50x

816-24 Alpha-B Polishing Cloth, 8" PSApkg/10

■ Met-X Polishing Cloth, Adhesive Back

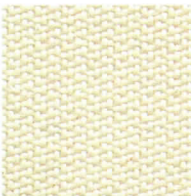


Popular first polish cloth for diamond, high cutting rate with good edge retention.
 micrograph= 50x

816-37 Met-X Polishing Cloth, 8" PSApkg/10

816-38 Met-X Polishing Cloth, 10" PSApkg/10

■ Nylon Polishing Cloth, Plain and Adhesive Back



For polishing most materials with diamond or alumina while maintaining flatness.
 micrograph= 50x

816-63 Nylon Polishing Cloth, 8" PSApkg/10

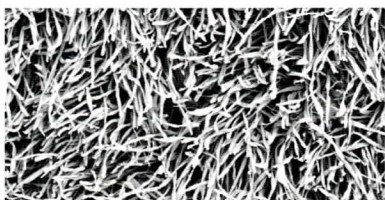
■ Canvas Polishing Cloth, Plain Back

For rough polishing with aluminum oxide or silicon carbide powders.

816-52 Canvas Polishing Cloth, 8" plainpkg/10

816-53 Canvas Polishing Cloth, 10" plainpkg/10

■ Selvty Polishing Cloth, Plain Back

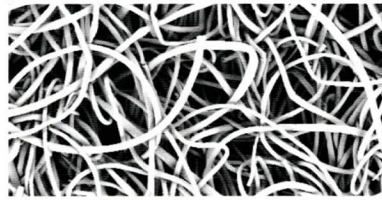


Cotton medium nap used for first and final polishing of metals and ceramics with alumina.
 50x

816-72 Selvty Polishing Cloth, Plain, 8" Plainpkg/10

816-74 Selvty Polishing Cloth, Plain, 12" Plainpkg/10

■ Broadcloth Polishing Cloth, Plain Back



Low wool nap general purpose cloth for final polishing, used with aluminas.
 50x

816-86 Broadcloth Polishing Cloth, 8" Plainpkg/10

816-88 Broadcloth Polishing Cloth, 12" Plainpkg/10

■ Cotton (high grade) Polishing Cloth, Plain Back

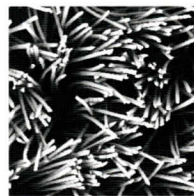


Natural, low nap first polish cotton cloth used on soft materials with diamond, alumina and oxides.
 50x

816-92 Cotton (high grade) Cloth, 8" Plainpkg/10

816-93 Cotton (high grade) Cloth, 10" Plainpkg/10

■ Rayon Velvet Polishing Cloth, Plain Back



Synthetic rayon velvet for polishing and final polishing soft materials such as gold, lead and tin with alumina.
 micrograph= 50x

816-109 Rayon Velvet Polishing Cloth, 8" Plain . . .pkg/10

■ 3M™ Multipurpose Adhesive



- High tack, fast drying adhesive offers great coverage
- Permanently attaches foils, paper, cardboard, felt cloth to painted or unpainted metals, wood and hardboard
- Controlled spray pattern to minimize overspray and cleanup
- Mount photographs on art board or foam core.
- Not recommended for EPS expanded polystyrene foam




16049 3M™ Multipurpose Adhesiveeach

= MSDS on web page

■ 3M™ Adhesive Remover



Powerful and environmentally friendly replacement for mineral spirits, solvents and other unfriendly cleaners. Ideally suited for removing used grinding/lapping/polishing discs with PSA backing from their support discs. Citrus-based 3M™ Adhesive Remover is also very effective in removing overspray of any aerosol adhesives, grease, oil, grime, tape residue, tar, wax, etc. A solvent-free formulation that provides wipe-away convenience with no filmy residue. CFC free. 

- 80924** 3M™ Adhesive Remover, 6.25 oz. cans . . .case/6
80924-1 3M™ Adhesive Remover, 18.5 oz. can . . .each
80924-10 3M™ Adhesive Remover, 18.5 oz. can . . .case/6

Diamond Polishing Compounds and Suspensions

■ Polycrystalline Diamond Paste



The polycrystalline is typically used on hard to polish materials such as ceramics, tool

Size	Nominal μm Range
15.0 μm	10 - 20
9.0 μm	6 - 12
6.0 μm	4 - 8
3.0 μm	2 - 4
1.0 μm	0 - 2
.05 μm	0 - 1
0.25 μm	0 - 0.50
0.1 μm	0 - 0.20

steels, sapphire, and super alloys. It has more facets or cutting edges and keeps its cutting ability by being less friable (easily crumbled or pulverized) than the more common and less costly monocrystalline diamonds. Monocrystalline diamonds tend to have longer, sharper edges and are more suitable for less hard materials such as brass or soft steel.

Polycrystalline diamond is somewhat spherical in shape and it has a greater number of cutting facets than monocrystalline diamond, therefore reducing subsurface deformation, giving more precise results when surfaces are etched.

- 815-224** Polycrystalline Diamond Paste, 5g/syringe, 15.0 μmeach
815-222 Polycrystalline Diamond Paste, 5g/syringe, 9.0 μmeach
815-220 Polycrystalline Diamond Paste, 5g/syringe, 6.0 μmeach
815-218 Polycrystalline Diamond Paste, 5g/syringe, 3.0 μmeach
815-216 Polycrystalline Diamond Paste, 5g/syringe, 1.0 μmeach
815-214 Polycrystalline Diamond Paste, 5g/syringe, 0.5 μmeach

- 815-212** Polycrystalline Diamond Paste, 5g/syringe, 0.25 μmeach
815-210 Polycrystalline Diamond Paste, 5g/syringe, 0.1 μmeach


■ Diamond Paste Polishing Compound



for cleaning and polishing

Diamond paste ready-packed for dispensing in syringes which are color-coded. Graded sizes and compounded for good dispersion. Exceeds US standards for purity, size and uniformity. Excellent cutting rates

and provides a good smooth finish. Recommended for polishing various metals, minerals, glass, ceramics, carbides, semiconductors. Available in 5 and 18 gram syringes and as 250 milliliter pump spray.

Water-based. Set: Includes 5 sizes, (5g syringes or 250ml pump sprays) each: 0.25 μm , 0.5 μm , 1 μm , 3 μm and 6 μm . 

- 895-20** Diamond Polishing Paste in Syringes, set of 5 sizeseach

Prod. No.	Material	Color	μm	qty
895-23	Diamond Paste	●	45	5g
895-23-18	Diamond Paste	●	45	18g
895-22	Diamond Paste	●	30	5g
895-22-18	Diamond Paste	●	30	18g
895-10	Diamond Paste	●	15	5g
895-10-18	Diamond Paste	●	15	18g
895-21	Diamond Paste	●	9	5g
895-21-18	Diamond Paste	●	9	18g
895-9	Diamond Paste	●	6	5g
895-9-18	Diamond Paste	●	6	18g
895-8	Diamond Paste	●	3	5g
895-8-18	Diamond Paste	●	3	18g
895-7	Diamond Paste	●	1	5g
895-7-18	Diamond Paste	●	1	18g
895-6	Diamond Paste	●	0.5	5g
895-6-18	Diamond Paste	●	0.5	18g
895-5	Diamond Paste	●	0.25	5g
895-5-18	Diamond Paste	●	0.25	18g
895-4	Diamond Paste	●	0.1	5g
895-4-18	Diamond Paste	●	0.1	18g



■ Diamond Polishing Pump Sprays, Water Based

Diamond Polishing Spray, ready for use in convenient spray bottle for direct application on polishing cloth. Same high quality diamond grades as used in the syringes. **M**

- 895-30** Diamond Polishing Pump Spray, set of 5 sizeseach
- 895-39** Diamond Polishing Pump Spray, 6µm size, 250mleach
- 895-38** Diamond Polishing Pump Spray, 3µm size, 250mleach
- 895-37** Diamond Polishing Pump Spray, 1µm size, 250mleach
- 895-36** Diamond Polishing Pump Spray, 0.5µm size, 250mleach
- 895-35** Diamond Polishing Pump Spray, 0.25µm size, 250mleach



■ Diamond Polishing Extender Fluid, Water Based

The diamond extender fluid is used to dilute the diamond paste on polishing cloths to ensure even dispersion and more effective cutting action. Water-based, available in 1 pt. and 1 gal. **M**

- 895-25** Diamond Polishing Extender Fluid, 1 pt.each
- 895-26** Diamond Polishing Extender Fluid, 1 gal.each



■ Alumina Fine Polishing Suspension, Water Based

High quality, fine graded Alumina suspension (water-based) for fine and end polishing of metallographic specimens. Reduces surface distortions and gives excellent polishing results. Can be used for analytical applications where diamond polishing is not suitable (analysis of carbon).

- 895-59** 5µm Alumina Suspension, 6 oz.each
- 895-58** 3µm Alumina Suspension, 6 oz.each
- 895-57** 1µm Alumina Suspension, 6 oz.each
- 895-56** 0.5µm Alumina Suspension, 6 oz.each
- 895-55** 0.3µm Alumina Suspension, 6 oz.each
- 895-54** 0.05µm Alumina Suspension, 6 oz.each

■ Colloidal Silica Suspension



A non-crystallizing silica (SiO₂) suspension stabilized at an alkaline pH value of 9.8. The combination of very fine abrasive particles in a chemically aggressive liquid provides a chemical-mechanical polishing action. Ideal for final polishing to obtain a deformation-free surfaces. Obtain excellent results on IC-cross sections, ceramics, minerals, hard steels and ductile non-ferrous materials. Recommended as final polishing for EBSD samples. Supplied in 32 oz. bottle (950ml) with a 40% particle concentration in water, pH range 9-7-9.9.

- 815-110** Colloidal Silica Suspension, 0.06µm, 32 oz.each

■ Polycrystalline Diamond Suspension



Polycrystalline Diamonds are typically used on hard materials such as ceramics, tool steel, sapphire, super alloys and Si. They have more cutting edges, are less fragile and cause less subsurface deformation. Water soluble, bottle of 250ml.

- 814-328** Polycrystalline Diamond Suspension, 45µm, 250mleach
- 814-326** Polycrystalline Diamond Suspension, 30µm, 250mleach
- 814-324** Polycrystalline Diamond Suspension, 15µm, 250mleach
- 814-322** Polycrystalline Diamond Suspension, 9µm, 250mleach
- 814-320** Polycrystalline Diamond Suspension, 6µm, 250mleach
- 814-318** Polycrystalline Diamond Suspension, 3µm, 250mleach
- 814-316** Polycrystalline Diamond Suspension, 1µm, 250mleach
- 814-314** Polycrystalline Diamond Suspension, 0.5µm, 250mleach
- 814-312** Polycrystalline Diamond Suspension, 0.25µm, 250mleach
- 814-310** Polycrystalline Diamond Suspension, 0.1µm, 250mleach

M = MSDS on web page

MATERIALS SCIENCE

Metal Polish; High Performance Cloth; Lens Cleaning Cloth; Diamond Scriber

■ Wenol® Metal Polish



Wenol® is widely used as a cleaner and polish for electron microscope applications, ion beam

systems, vacuum coating systems and general lab applications. Wenol® has been originally formulated for use on hard metal surfaces such as stainless steel. It can be used to clean and polish hard metal parts for vacuum systems. The carrier fluid dissolves in most hydrocarbons and is easily removed. Wenol® is petroleum based and does not contain silicones. It is not recommended for use on soft metal such as aluminum. **M** MSDS

The many users of POL polish will find that Wenol® will give the same satisfactory results.

892 Wenol® Metal Polish, 100mleach

■ Unipol® Metal Polish



The original formulation of UNIPOL® is very similar to POL and Wenol®. It is now

available as an alternative to POL metal polish (which has been discontinued). Many users of POL have switched to UNIPOL® and have found that UNIPOL® will give the same performance as POL. It is widely used as a cleaner and polish for electron microscopes, ion beam systems, vacuum coating systems, substrates and general lab applications. UNIPOL® has been formulated to give optimum results on hard metal surfaces such as stainless steel or chromium coated surfaces. It performs very well as a cleaning polish for Wehnelt cylinders. UNIPOL® is petroleum based, does not contain silicones and dissolves in most hydrocarbons. It is not recommended for use on soft metal such as aluminum.

818 Unipol® Metal Polish, 50mleach

■ Twill-Jean Cleaning Cloths

the most popular EM cleaning cloth



Lintless, pure cotton, cut on a bias. For sensitive EM polishing and cleaning applications.

812-14 Twill-Jean Cleaning Cloths, Cotton, 10.2 x 10.2CM (4" x 4")pkg/300

812-16 Twill-Jean Cleaning Cloths, Cotton, 15.2 x 15.2CM (6" x 6")pkg/300

812-2 Twill-Jean Cleaning Cloths, Cotton, 22.9 x 22.9CM (9" x 9")pkg/100

continued, next column

812 Twill-Jean Cleaning Cloths, Cotton, 22.9 x 22.9cm (9" x 9")pkg/300

812-6 Twill-Jean Cleaning Cloths, Cotton, 43.2 x 43.2cm (17" x 17")pkg/75

■ 3M™ Scotch-Brite™ High Performance Cloth



Provides ultra cleaning power because of its knitted interwoven design of water- and oil-absorbing microfibers that lift and trap liquids, grease, dust and dirt particles, even without chemicals. Unprecedented dry dusting and damp polishing ability.

Machine washable, dryer safe. Size: 32 x 36cm (12.6 x 14.2"). Colors: Blue, White, Yellow.

813-10 3M™ Scotch-Brite™ High Performance Cloth, ● Bluepkg/5

813-12 3M™ Scotch-Brite™ High Performance Cloth, ○ Whitepkg/5

813-14 3M™ Scotch-Brite™ High Performance Cloth, ● Yellowpkg/5

■ 3M™ Lens Cleaning Cloth



Lint-free and Scratch-free! The unique 3M™ microfibers lift dust and oils from delicate lenses without the use of chemicals. Ideal for eyeglass lenses, camera lenses, binoculars, microscopes and other delicate surfaces. The cloth is reusable and machine washable hundreds

of times. Individually packaged 18 x 16cm (7 x 6") cloths, 10 to a box, two boxes (20 cloths) per case. Note: Cloths will not scratch surfaces, but can pick up particles that do scratch. Each box contains multiple colors; blue, yellow and grey.

813-20 3M™ Lens Cleaning Clothcase/20

■ 3M™ Diamond Scriber



Plastic pen-like shaft; diamond tip. Marks glass slides, scribes metal, scores for breaking glass, and glass knives. Tip angle: 90°; Shaft diameter: 3.15mm (.124"); Shaft length from handle, with diamond: 5.9mm (.232"); Diamond diameter, exposed: 1.14mm (.045"); Diamond length, exposed: .86mm (.034"); Overall length, without cap: 155.6mm (6.125").

54463 3M™ Diamond Scribereach

Pikal® Professional Polishing Compounds

The Pikal® professional metal polishing and cleaning compounds are well known for their excellent results in many applications with a positive track record of nearly 100 years. The original formulation with aluminum oxide as abrasive material still serves well today. Pikal® metal polishing compounds are widely used for polishing:

- In manufacturing for polishing machined parts, surface finishing and precision polishing
- Cleaning of instrumentation such as electron microscopes, vacuum equipment analytical instruments - used by many service engineers
- Precision mechanics like cleaning and polishing of air-lock systems, positioning systems, shutters in vacuum systems
- Polishing and cleaning of substrates for thin film deposition and thin film research (glass, metals, silicon)
- Medical equipment to give it an easy to clean smooth surface finish

There are four Pikal® products, all based on the same abrasive polishing compound. Each product has its own special application, sometimes overlapping.

■ Pikal® Polishing Paste



Pikal® Paste is a thick paste with a high content of solids (abrasives) and is supplied in a tin. Yields good results in instrumentation cleaning and surface finishing in manufacturing. Can be used to remove "hard" stains on metal, glass and enamels. Also used for precision polishing of parts

with a narrow tolerance. Can be used on buffing wheels. Widely used to clean vacuum systems, deposition sources and stainless steel chambers. Can be applied to wipes or cotton swabs for polishing. Test first when used on softer materials such as copper, aluminum and soft metal alloys. M

893-10 Pikal® Polishing Paste, 250 gram tin each

■ Pikal® Care



Pikal® Care is formulated as a thinner paste, supplied in a tube and is specially suitable for stainless steel products and surfaces. Can be applied directly on the products and polished with wipes. M

893-20 Pikal® Care Polishing Paste, 150 gram tube . . each

■ Pikal® Liquid



Pikal® Liquid is an emulsion for gentler polishing of a wide variety of materials such as brass, stainless steel, copper, aluminum and plated surfaces both with flat and curved surfaces. Pikal® Liquid is supplied in a can and the emulsion may be applied directly on the product to be polished or via a polishing wipe. M

893-30 Pikal® Liquid Polishing Emulsion, 300 gram can each

■ Glaster® Polish



Glaster® Polish by Pikal® is formulated as a gentle cleaning/polishing product for cleaning glass, tiles, gold/silver products or gold/silver plated products and porcelain. Glaster® is supplied in a can and can be applied directly on the product to be polished or via a polishing wipe. M

893-40 Glaster® Cleaning/Polishing Emulsion, 300 gram can each

■ Cheesecloth Wipes

in convenient dispenser box



Use to wipe, clean, or dry cuvetts, delicate glassware, syringes, pipets, and pH electrodes. They are ideal for filtering and do not fall apart like paper towels.

All-purpose cheesecloth wipes are brilliant white and certified 100% pure cotton of reagent-grade quality and purity. A unique combination of cleanliness, softness, absorbency and strength. Will not scratch sensitive surfaces.

808-31 Cheesecloth Wipes, 10.1 x 10.1cm (4 x 4")pkg/200

808-32 Cheesecloth Wipes, 22.9 x 22.9cm (9 x 9")pkg/60

M = MSDS on web page

■ 3M™ Scotch-Brite™ Hand Pads



versatile, non-rusting abrasive pads for use on metals, ceramics and composites

These renowned abrasive cleaning pads are made of tough non-woven open nylon web with embedded abrasive particles. The Scotch-Brite™ pads are waterproof and they can be used wet or dry. They are designed to provide consistent performance from start to finish, leaving a uniform surface. The open web construction will not rust like steel wool and can be rinsed and used repeatedly. Size 15.2 x 22.9cm (6 x 9"). They are available in 5 grades, ranging from a medium/coarse grade for heavy duty cleaning applications to an ultra-fine grade for light cleaning applications and final surface finishing. For soft materials, such as brass and aluminum, the finer grades should be used.

Applications include:

- Cleaning of Bell Jars
- Cleaning of worktops, ceramic tiles and sinks
- Cleaning of laboratory tools such as heaters, beakers and mixers
- Cleaning prior to soldering or welding
- Masking or removing surface imperfections
- Blending of scratches on vacuum components
- Cleaning of stainless vacuum components
- Removing light rust/paint
- Deburring and removing sharp edges
- Surface finishing

Most aggressive pad for cleaning, finishing, graining, defuzz, denib

80926 3M™ Scotch-Brite™ Pads #7447, Maroon
General Purpose, Very Fine, AObox/20

Intermediate pad for cleaning, finishing, graining

80927 3M™ Scotch-Brite™ Pads #6444, Brown
Extra Heavy Duty, Fine,
also for denib or defuzz, AObox/20

Most aggressive pad with tight, dense, durable web

80928 3M™ Scotch-Brite™ Pads #7440, Tan
Heavy Cleaning, deburring, finishing, AO . .box/10

Fine mineral excellent for fine finish and light cleaning

80929 3M™ Scotch-Brite™ Pads #7445, White
Super Fine, Al silicate abrasive, among least
aggressivebox/20

Finest pad for final finishing and light cleaning:

80930 3M™ Scotch-Brite™ Pads #7448, Light Gray, Finest
SiC hand pad available; ultra fine grade SiC box/20

■ UltraSense™ Blue Nitrile Gloves



Ultra-soft, next generation nitrile formulation provides the relaxed fit and feel that you would expect from a latex glove. The high quality nitrile offers reliable barrier protection against many hazardous and infectious substances. Unique manufacturing process delivers an outstanding grip in wet and dry environments. A superior value, ambidextrous, synthetic glove that has a beaded cuff and is powder-free.

100 gloves per dispenser box.

Enlargement shows the UltraSense™ finely textured finger tips for better grip.

Length: 9.6" (245mm)

Palm thickness: 3.5 mil (0.09mm)

Finger thickness: 4.7 mil (0.12mm)

81850 UltraSense™ Nitrile Gloves, smallbox/100

81851 UltraSense™ Nitrile Gloves, mediumbox/100

81852 UltraSense™ Nitrile Gloves, largebox/100

81853 UltraSense™ Nitrile Gloves, x-largebox/100

■ UltraSense™ EC Extended Cuff, Blue Nitrile Gloves



Same as UltraSense™ gloves above but with extended cuff, offering better protection of wrist and forearm. Powder-free. 100 gloves per dispenser box.

Length: 11.5" (292mm)

Palm thickness: 3.5 mil (0.09mm)

Finger thickness: 4.7 mil (0.12mm)

81855 UltraSense™ EC Nitrile Gloves, smallbox/100

81856 UltraSense™ EC Nitrile Gloves, medium . . .box/100

81857 UltraSense™ EC Nitrile Gloves, largebox/100

81858 UltraSense™ EC Nitrile Gloves, x-largebox/100

■ 3M™ Splash Guard Safety Goggles



Reduce exposure to a variety of eye hazards including impact, splash and dust. Vinyl frame with soft border for excellent fit. Adjustable head strap and polycarbonate lens. Sold in packages of 6.

19834 3M™ Splash Guard Safety Gogglespkg/6

■ 3M™ Safety Goggles, Perforated Frame



Multi-purpose safety goggles with polycarbonate lens to guard against impact eye hazards. Vinyl frame with soft border for excellent fit, adjustable head strap. Perforated for added ventilation and comfort. Sold in packages of 6.

Note: Use 19834 for protection against splash or dust hazard.
19835 3M™ Safety Gogglespkg/6

■ 3M™ Wrap Around Safety Glasses



Comfortable, and stylish safety glasses that provide side and brow protection. Black frame, clear lens.

19832 3M™ Safety Glasses, black frameeach

■ 3M™ Light-weight Safety Glasses



Stylish safety glasses that give comfortable eye protection. They meet the high impact standards for Occupational and Educational Eye and Face Protection ANSI Z87.1-2003. Black frame temples, clear lens.

19833 3M™ Safety Glasses, black templeseach

■ 3M™ Visitor Specs, Clear



An economical alternative for short term eye protection. Can be worn alone or over prescription glasses. Polycarbonate lens reduces UVB and UVA radiation from natural sunlight by 99%. Clear. Meets the requirements of the Standard for Occupational and Educational Eye and Face Protection ANSI Z87.1-2003. Usually used by plant visitors.

19836 3M™ Visitor Specs, Clearpkg/6

■ 3M™ Particulate Respirators, Disposable

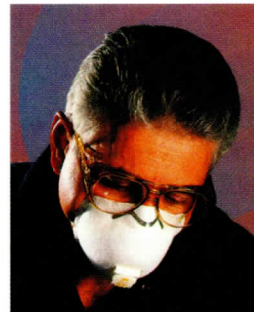


3M™ 8210 is classified as an N95 particulate respirator. For non-oil hazards only. Meets NIOSH 42 CFR 84 N95 requirements. Minimum filter efficiency of 95% (for particle sizes 3µm or larger). Grinding, sanding, sweeping, and other

dusty applications. Adjustable noseclip design helps for a good seal and good fit. Adjustable straps.

19942 3M™ Particulate Respirator N95box/20

■ 3M™ Particulate Respirators, Disposable, NIOSH Rated



3M™ 8293 P100 is suited for those who want NIOSH's highest rated efficiency in a maintenance-free respirator. Workplace applications includes OSHA substance specific particle exposure in concentrations up to 10x the OSHA PEL (lead, cadmium, arsenic, MDA, excluding asbestos). This respirator features the 3M™ Cool Flow™ Exhalation Valve, comfortable faceseal and adjustable straps.

19943 3M™ Particulate Respirator P100each

MATERIALS SCIENCE

Respirator; Wash Bottles; Epoxy Hand Cleaner; Barrier Cream; Face Shield; Air Filter System

■ 3M™ Particle Respirator 9211, N95



It is a breakthrough in comfort and convenience. This three-panel respirator with innovative design is ideally

suited for work settings that involve heat, humidity or long periods of wear. Suggested applications include grinding, sanding, sweeping, bagging and other operations that create dust. Uses may be in metal and mineral processing, surface preparations, dry chemical handling. The respirator is individually packaged to help prevent contamination during storage. It features a low profile collapse resistant design, 3M™ Cool Flow™ Exhalation Valve, and a soft nose foam pad. Its lightweight design helps promote worker acceptance and comfort and increased wear time.

19953 3M™ Particulate Respirator 9211pkg/12

■ Safety Labeled Wash Bottles



For safe and positive identification of common laboratory solutions, these wash bottles are labeled in bold, eye-catching letters and symbols. Standard Diamond Alert symbols indicate what type of hazard the contents may present.

Includes these bottles: Water, Acetone, Methanol, Isopropanol, Toluene, and Ethanol. Color-coded.

19800 Safety Wash Bottles, variety 6 packcase/6

■ Epoxy Hand Cleaner



Premium, heavy duty cleansing agent, formulated to speed the removal of all types of epoxy residue. Contains mineral spirits and isopropyl alcohol. It effectively dissolves epoxy, polyester, urethane, lacquer, grease, oil and many other hard to remove soils. 450ml (15 fluid oz.) bottle. **M**

19972 Epoxy Hand Cleaner, 450mleach

■ Barrier Cream 222®

skin protectant with silicone

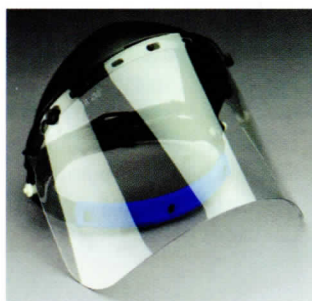


For wet or dry work, helps protect skin against many sticky, staining, irritating industrial substances. 222® is not readily removed by many water based or oil based substances. To remove wash vigorously with soap and water. Tube of 118ml (4 fl. oz.) **M**

19974 Barrier Cream 222®, 4 fl. oz.each

M = MSDS on web page

■ 3M™ Face Shield *eye and face protection*



- Replaceable, clear polycarbonate shield that provides clear vision
- The shield is held securely in position with a cam-lock
- Provides secondary eye and face protection
- Fully cushioned; removable brow pad absorbs moisture

Meets requirements of ANSI Z87.1-2003, high impact

Warning: Always use face shields with primary eye protection such as safety glasses or goggles (not included).

19837 3M™ Face Shield Kiteach

■ Clean Air System *portable air Filter system*



Remove and adsorb fumes and airborne particulates from your work area, portable fume hood or other equipment.

Localized air purification protection is provided for those laboratories which have overcrowded fume hoods or where a fume hood is simply unavailable in the

area. Fumes and airborne particulates are led from the vent, through a 5" diameter chemically resistant hose (5 feet [152cm] provided) to a filter housing. Various types of filters are available (HEPA, carbon, dacron and aluminum pre-filters), but the one we recommend for microscopy/histology is type FRC-4 which has been tested for glutaraldehyde and formaldehyde fumes.

Desk and wall-mounted designs are available.

3120 Clean Air System, Air Purifier, Single Hose, 115VAC (does not include filter)each

3120-220 Clean Air System, Air Purifier, Single Hose, 230VAC (does not include filter)each

Clean Air System Filters: Size 10" x 17" x 2" for EM (glutaraldehyde, osmium tetroxide; highest adsorbing capacity) (Special/carbon treated)

3024 Filters, FRC-4 Series (special/carbon treated) . .pkg/3

3026 HP-2 series HEPA filter, 99.99% @ 0.3µmeach

For Formaldehyde:

3028 FR-4 Series; carbon filter with 8-10 lbs. adsorbentpkg/3

If Additional Hose Is Required:

3040 Hose (5" dia.), extra, for Clean Air System 3120per foot

If Wall Mount Is Required:

3042 Wall Mount for Clean Air System 3120each

Note: Particle Work: HEPA filter Chemical Vapors: FRCB-2 or 1.5" deep (special charcoal vapor).