

Apex™ System



BUEHLER

Solutions for Materials Preparation, Testing and Analysis

Apex™ Quick Change System

Do you require multiple pieces of silicon carbide papers to planar grind your specimens? Do you need a simple and environmentally friendly way to attach your grinding surfaces and cloths to a platen? Do you require contaminant free storage of your surfaces between uses?

The Apex System solves all these needs!

Apex S Quick Change System

Together the Apex S Carrier Film, CarbiMet™ 2 S and MicroCut™ S Abrasive Discs work to improve productivity and usability of Grinding-Polishing machines through simple application and effortless removal of grinding surfaces to the working platen.

- Apply and remove grinding surfaces to and from the working platen without the hassle of PSA and its residue
- Strong grip with no adhesives
- Use hundreds of abrasive discs per Apex S Carrier Film
- Compatible with all Grinder-Polisher Systems
- Maintain cleanliness with just water and a paper towel

Apex S Quick Change Carrier Film

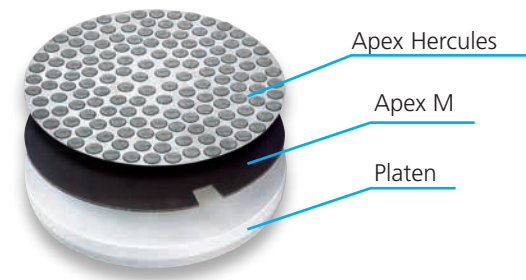
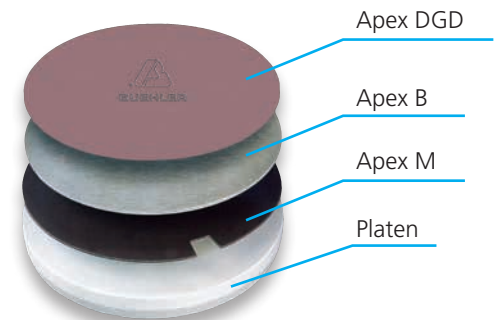
- High friction surface available in either PSA or magnetic backed
- Adheres directly to Apex M to be used with the Apex Quick Change Magnetic System
- Adheres directly to any conventional platen

CarbiMet 2 S and MicroCut S Abrasive Discs

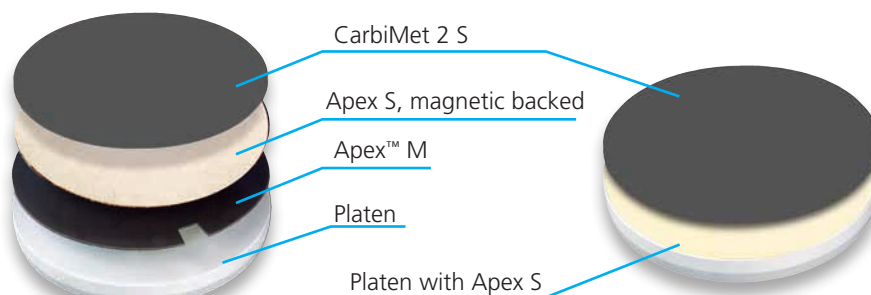
- The same CarbiMet 2 and MicroCut abrasive surface manufactured with Apex S compatible backing
- Unchanged abrasive surface ensures seamless integration into preparation methods

Apex M & B Quick Change Magnetic

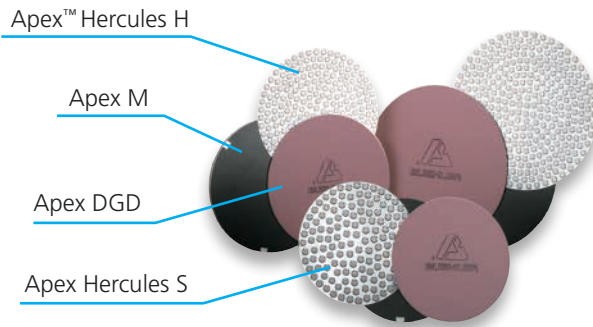
- Two component system that can be used on any conventional platen
- Apex M Magnetic Disc is a reusable, long-life magnetic substrate with a pressure sensitive adhesive (PSA) layer to attach directly to the platen
- Apex B Bimetallic Plate is a multi-layer design that is ferromagnetic on the side that attaches to the Apex M and nonmagnetic on the side to which you attach the cloth or grinding surface
- Apex B prevents accumulation of magnetic polishing debris on grinding surfaces
- Eliminates the need for more than one platen
- Makes use and reuse of surfaces as simple as 1-2-3



Apex Quick Change Magnetic System



Apex S Quick Change System



Innovative magnetic-based system provides strength to hold during grinding/ polishing operations, yet releases quickly with Apex Lift Tool.



Apex Coarse Grinding Discs

Apex MagnoSys

- Economical, convenient quick-change magnetic system for use when magnetic polishing debris is not a concern
- Apex MagnoDisc aluminum platen already equipped with the MagnoFix magnetic disc - no assembly required
- Apex MagnoMet and MagnoPad (Teflon® coated) are thin metallic plates for use with any PSA backed cloth or grinding surface
- Apex MagnoMet and MagnoPad can be used with either Apex MagnoDisc or MagnoFix

Apex Diamond Grinding Disc (DGD)

- Excellent for ceramics, glass, TSC and more
- Consumable of choice for Z-axis controlled material removal
- Fixed abrasive surface providing long-wear, high removal rates and superb edge retention and flatness
- Use water only

Apex CGD & DGD Color

- Coarse grinding discs (CGD) provide aggressive removal and excellent flatness on a long wear surface
- Standard discs provide more moderate removal and excellent edge retention and flatness on a long wear surface
- Consumable of choice for Z-axis controlled material removal
- Use water only
- CGD available in the following colors: Grey (320µm), Green (240µm), and Black (125µm)
- DGD Color available in the following colors: Green (240µm), Black (125µm), Red (75µm), Purple (55µm), Yellow (35µm), White (15µm), and Blue (8µm)

Apex Hercules H & S Rigid Grinding Discs

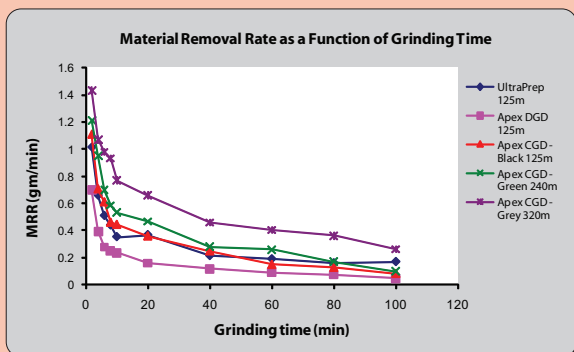
- Improves efficiency by reducing processing steps
- Add MetaDi™ or MetaDi Supreme Diamond Suspension
- Provides superb flatness and edge retention
- Use with Apex M, MagnoDisc or MagnoFix
- Long life - up to 200 sample holders
- Corrosion resistant

Magnetic Backed (MB) Cloths

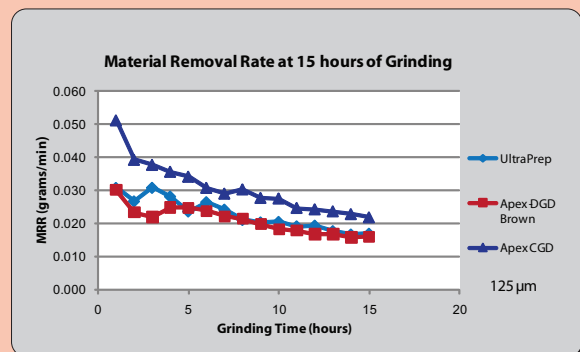
- Eliminates the possibility of air bubbles between the cloth and the platen
- Are easier to apply and remove than other types of cloths
- Eliminates the need for an Apex B Disc
- Soft, flexible backing makes changing cloths simple

Apex Storage Cabinets

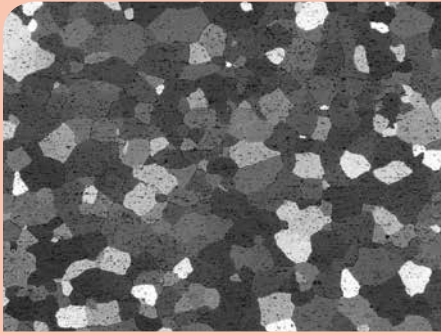
- Secure and organize your surfaces and platens
- Lockable
- Sturdy plastic construction
- 6 storage slots (4 additional available on 19-06-09)



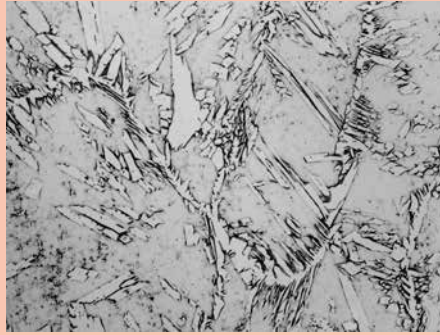
Material Removal Rate



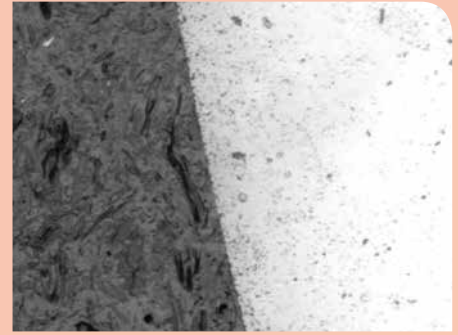
Durability



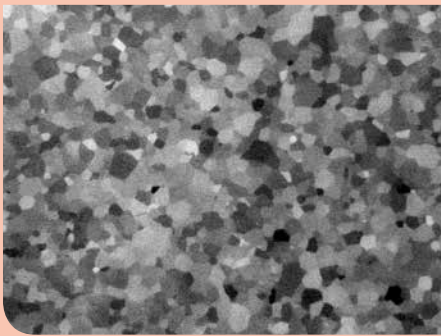
Al 6005 Specimen etched with Barker's Reagent and prepared using: Apex™ DGD 30µm, Apex DGD 6µm, Apex DGD 3µm and MicroCloth™ with MasterPrep™, 5X.



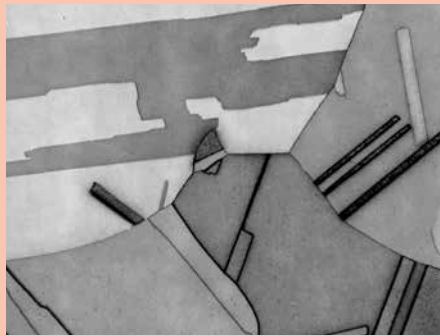
Duplex Stainless Steel, etched with Grossbeck's Reagent and prepared using: Apex DGD 30µm, Apex DGD 6µm, Apex DGD 3µm, and ChemoMet™ with MasterPrep™, 50X.



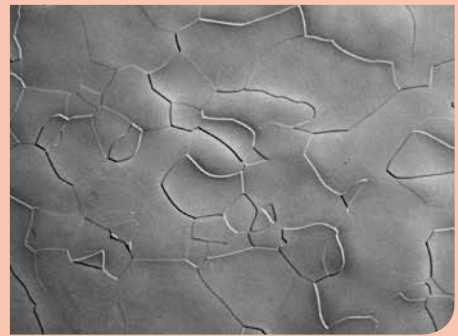
Flat and damage free ceramic specimen prepared using: Apex DGD 45µm, Apex DGD 6µm, Apex DGD 3µm, and TexMet™ C with MasterMet™, 200x.



Ti 99.999% prepared using: Apex DGD 35µm, Nylon with 9µm MetaDi™ Supreme, and MicroCloth with MasterMet 2, as polished, viewed with polarized light, 200X.



Cu 99.99%, prepared using: Apex DGD Color Yellow, Nylon with 9µm MetaDi Paste, TexMet with 3µm MetaDi Paste, TexMet C with 1µm MetaDi Paste and ChemoMet with MasterPrep, etched with Waterbury-Stacks solution, 50X



Ta 99.99% prepared using: Apex DGD 35µm, Nylon with 9µm MetaDi Supreme, TexMet C with 3µm MetaDi Supreme, and ChemoMet with MasterMet 2, etched with 50ml HF, 10ml HNO₃, 50ml water, 100X.

Ordering Information

Apex Quick Change System

Recommended purchase: 1 Apex M Disc per platen and as many Apex S Carrier Films and Apex B Plates as needed for your laboratory cloths and grinding surfaces.

Type	8in [203mm]	10in [254mm]	12in [305mm]	14in [350mm] ^{3,4}
Apex S Carrier Film, Magnetic backed (qty 2)	16-2074	16-2574	16-3074	
Apex S Carrier Film, PSA backed (qty 2)	16-2075	16-2575	16-3075	
Apex M Discs - PSA Backed Magnetic Disc (qty 1)	41-2739-608-001	41-2739-610-001	41-2739-612-001	
Apex B Bimetallic Plate (qty 1)	41-2739-208-001	41-2739-210-001	41-2739-212-001	
Apex MagnoDisc - Aluminum Platen with MagnoFix Installed (qty 1)	16-2071	16-2571	16-3071 ^{SO}	
Apex MagnoFix - PSA Backed Magnetic Disc (qty 1)	16-2070	16-2570 ^{SO}	16-3070 ^{SO}	
Apex MagnoMet Metallic Plates (qty 5)	16-2072	16-2572	16-3072	16-3572
Apex MagnoPad Teflon® Coated Metallic Plates (qty 5)	16-2073	16-2573	16-3073	16-3573

^{SO} - Special Order. Items may have long lead times and minimum orders.

CarbiMet™ 2 S & MicroCut™ S Abrasive Discs (qty 100)

For use with Apex™ S Carrier Films

Grit Size ANSI [FEPA]	Approx. Micron Size	8in [203mm]	10in [254mm]	12in [305mm]
60 [P60]	269	30-51281	30-51301	30-51321
120 [P120]	127	30-51282	30-51302	30-51322
180 [P180]	78	30-51283	30-51303	30-51323
240 [P280]	52	30-51284	30-51304	30-51324
320 [P400]	35	30-51285	30-51305	30-51325
400 [P800]	22	30-51286	30-51306	30-51326
600 [P1200]	15	30-51287	30-51307	30-51327
800 [P1500] MicroCut S Disc	13	30-51288	30-51308	30-51328
1200 [P2500] MicroCut S Disc	8	30-51289	30-51309	30-51329



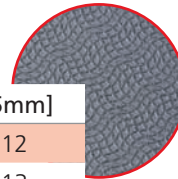
Apex DGD (Diamond Grinding Discs) (qty 1)

Micron	8in [203mm]	10in [254mm]	12in [305mm]
165µm	41-5008	41-5010	41-5012
125µm	41-5108	41-5110	41-5112
70µm	41-5208	41-5210	41-5212
45µm	41-5308	41-5310	41-5312
30µm	41-5408	41-5410	41-5412
15µm	41-5508	41-5510	41-5512
9µm	41-5608	41-5610	41-5612
6µm	41-5708	41-5710	41-5712
3µm	41-5808	41-5810	41-5812
0.5µm	41-5908	41-5910	41-5912



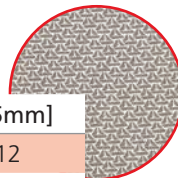
Apex CGD (Coarse Grinding Disc) (qty 1)

Color – Micron	8in [203mm]	10in [254mm] ^{SO}	12in [305mm]
Grey – 320µm	41-10006	41-10009	41-10012
Green – 240µm	41-10007	41-10010	41-10013
Black – 125µm	41-10008	41-10011	41-10014



Apex DGD Color (Diamond Grinding Discs) (qty 1)

Color – Micron	8in [203mm]	10in [254mm] ^{SO}	12in [305mm]
Green – 240µm	41-3308	41-3310	41-3312
Black – 125µm	41-3408	41-3410	41-3412
Red – 75µm	41-3508	41-3510	41-3512
Purple – 55µm	41-3608	41-3610	41-3612
Yellow – 35µm	41-3708	41-3710	41-3712
White – 15µm	41-3808	41-3810	41-3812
Blue – 8µm	41-3908	41-3910	41-3912

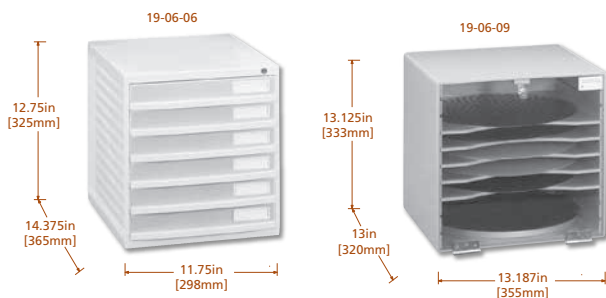
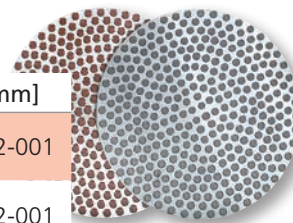


Magnetic Backed (MB) Cloths for use with Apex™ M

Cloth	Quantity	8in [203mm]	10in [254mm]	12in [305mm]
Ultra MB	5	41-10041	41-10042	41-10043
TexMet MB	5	41-10035	41-10036	41-10037
Satyn MB	5	41-10038	41-10039	41-10040
Micro MB	5	41-10093	41-10094	41-10095
Chemia MB	5	41-10032	41-10033	41-10034

Apex Hercules Rigid Grinding Discs (qty 1)

Type	8in [203mm]	10in [254mm]	12in [305mm]
Apex Hercules H For materials ≥ HRC20, HV236	41-2740-308-001	41-2740-310-001	41-2740-312-001
Apex Hercules S For materials < HRC20, HV236	41-2740-408-001	41-2740-410-001	41-2740-412-001



Apex Storage Cabinets

- Durable, easy to clean storage of platens and surfaces
- Two models:
 - 8in [203mm] / 10in [254mm]
 - 12in [305mm]

19-06-06 Apex Cabinet for 8in [203mm] / 10in [254mm] discs and platens
 19-06-09 Apex Cabinet for 12in [305mm] discs and platens
 19-06-10 Additional Shelves for 19-06-09



Aluminum Platens

40-4061 8in [203mm]
 40-0500 10in [254mm]
 49-1777 12in [305mm]
 63-1001 8in [203mm] for Vanguard Systems



60-6075 Roller



1330S50 Apex Lift Tool

For a complete listing of consumables, please refer to Buehler Buyer's Guide or contact your local Buehler Sales Engineer. Buehler continuously makes product improvements; therefore technical specifications are subject to change without notice.

Sectioning
AbrasiMet • AbrasiMatic • IsoMet

Mounting
SimpliMet

Grinding & Polishing
EcoMet • AutoMet • MetaServ

Imaging & Analysis
OmniMet

Hardness Testing
Wilson® Hardness



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