

# BUEHLER<sup>®</sup> PetroThin<sup>®</sup> THIN SECTIONING SYSTEM

- A Precision Thin Sectioning Instrument
- Thin Sections Most Non-Metallic Materials
- Two High Precision Micrometers Control Cutting and Grinding
- Water Cooling
- Universal Vacuum Slide Chuck With In-line Filter
- 8" (203mm) Diamond Cutting and Grinding Wheels
- Stainless Steel Work Chamber
- Safety Interlock Cutoff Switch



# Resectioning & Grinding In A Single System

**PetroThin® Thin Sectioning System** is a precise, easy-to-use instrument for thin sectioning a wide variety of geological specimens, such as rocks and minerals, ceramics, refractories, concrete, etc., down to 35µm. A stainless steel cutting and grinding chamber holds an 8" (203mm) diamond cut-off blade and an 8" (203mm) diamond grinding wheel. Using a Cubic Boron Nitride (CBN) blade and grinding wheel (available accessories) the PetroThin is also ideally suited for biomedical sample preparation.

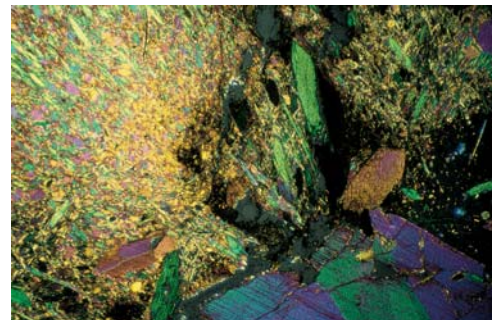
The universal chuck accepts 5 sizes of glass slides by simply adjusting the locating pins on the chuck face. A built-in vacuum pump provides a strong positive vacuum to hold the slide in place during resectioning and grinding. A vacuum gauge insures that the proper vacuum level is main-

tained. An innovative, in-line filter system removes any moisture from the vacuum line during use and automatically drains the filter jar each time the vacuum pump is turned off.

Diamond cutting and grinding wheels are mounted on one spindle so the glass slide need not be removed between steps. Both are precision aligned at the factory for easy, precise set-up. Two precision micrometers are used for controlling cutting and grinding. The resectioning micrometer is graduated to 0.01µm and can be locked at any desired setting to allow repetitive cutting to a pre-set thickness. The digital micrometer is graduated in inches/ microns and has a digital readout for accurate thin section grinding.



Microstructure from Niah Cave West Mouth, Sarawak, Malaysia which shows fine layers from the prehistoric cemetery sequence. The layers are primarily composed of guano. The slide was made by Julie A. Miller at the Thin Section Facility, Department of Archaeology, University of Cambridge, UK.



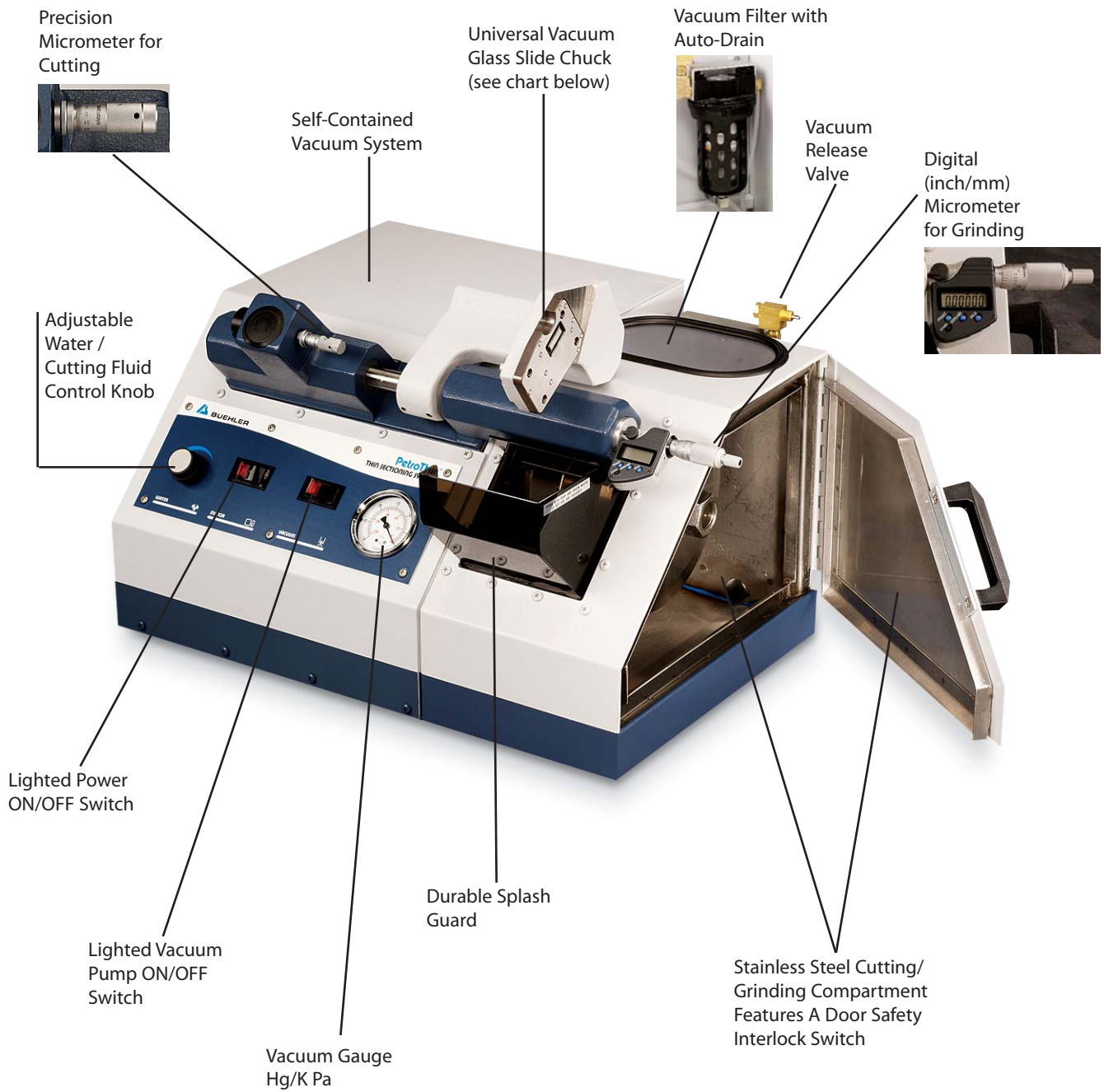
Microstructure of the mineral acmite ( $\text{NaFe}(\text{SiO}_3)_2$ ) viewed with transmitted polarized light, ~130x.



The 38-1490 PetroBond® Thin Section Bonding Fixture is designed to accurately control the thickness of the bonding media between the specimens and glass slides.



The 30-8050 PetroVue® Thin Section Viewer is designed for monitoring section thickness and uniformity during the grinding/lapping processes.



Glass slide mounted specimen is resectioned on the diamond cutting blade. The grinding wheel (right) reduces the specimen thickness without having to remove the specimen after resectioning.

**The PetroThin® Thin Sectioning System is designed to accept most common petrographic slides:**

1.06 x 1.81 inch	27 x 46mm
1 x 3 inch	25.4 x 76.2mm
1½ x 3 inch	38.1 x 76.2mm
2 x 2 inch	50.8 x 50.8mm
2 x 3 inch	50.8 x 76.2mm

## Specifications

**38-1450-160 PetroThin Thin Sectioning System** has a corrosion resistant table top cabinet, stainless steel cutting and grinding compartment, 8" (203mm) continuous rim diamond cut-off blade, 8" (203mm) diamond cup grinding wheel, micrometer for adjusting the cutting thickness, digital micrometer for adjusting the grinding thickness, integral vacuum pump with gauge and in-line filter, vacuum glass slide chuck, 1/3 HP (250 Watts) single speed motor, 115V/60Hz/1 phase with operating instructions. CE marked.

**38-1450-250 PetroThin Thin Sectioning System**, same as No. 38-1450-160 but with 220V/50Hz/1 phase operation. CE marked.

## Replacement Parts

Pins - Glass Slide Chuck	1450S044	Micrometer, Digital - For Grinding	R9321
Micrometer Replacement Battery	R8716	Micrometer - For Resectioning	1450S036

## Accessories

### PetroThin® Sectioning Supplies

Description	Size	Catalog Number
Continuous Rim Diamond Blade	8" x 0.055" x 1" (203mm x 1.4mm x 25.4mm)	11-4278
Continuous Rim Cubic Boron Nitride* Blade	8" x 0.055" x 1" (203mm x 1.4mm x 25.4mm)	11-4280
Diamond Cup Grinding Wheel	8" x 1/4" x 1" (203mm x 6.35mm x 25.4mm)	40-4508
Cubic Boron Nitride Cup Grinding Wheel*	8" x 0.055" x 1" (203mm x 1.4mm x 25.4mm)	40-4512
Dressing Stick	1/2" x 1/2" x 4" (12.7mm x 12.7mm x 102mm)	40-4510

\* recommended for Fe/Ni based, Co based and Ni based superalloys

### Petrographic Glass Slides & Cover Slides

Description	Inches	Millimeter	Quantity	Catalog Number
Glass Slides	1.06 x 1.81	27 x 46	1 gross (144)	40-8000-001
Glass Slides	1.06 x 1.81	27 x 46	10 gross (1440)	40-8000-010
Glass Slides, Micro	3 x 1	76.2 x 25.4	10 gross (1440)	40-8002-010
Glass Slides, Cover	0.94 x 1.54	24 x 39	10 gross (1440)	40-8008-010
Glass Slides, Cover	0.98 x 1.18	25 x 30	10 x 1000 pcs	40-8007-010

### Mounting Cements

Description	Qty/Wt	Catalog Number
Lakeside 70 Cement	12 bars	40-8100
Balsam	4 oz. (113gm)	40-8110-004
Balsam	1 lb. (0.45kg)	40-8110-016
ALCO Wax	0.70 oz. (20gm)	40-8120

### Petrographic Accessory Equipment

Description	Catalog Number
PetroVue® Thin Section Viewer	30-8050
PetroBond® Thin Section Bonding Fixture	38-1490
UltraMet® 2005 Sonic Cleaner	75-2005
Cast N' Vac Castable Vacuum System	20-3510

### Epoxy

Description	Qty/Wt	Catalog Number
EpoxiCure® Resin	1 qt. (0.95ℓ)	20-8130-032
EpoxiCure® Resin	1 gal. (3.8ℓ)	20-8130-128
EpoxiCure® Hardener	1/2 pt. (0.24ℓ)	20-8132-008
EpoxiCure® Hardener	1 qt. (0.95ℓ)	20-8132-032
EpoHeat® Resin	1 qt. (0.95ℓ)	20-8120-032
EpoHeat® Hardener	1 pt. (0.47ℓ)	20-8122-016
EpoThin® Resin	1 qt. (0.95ℓ)	20-8140-032
EpoThin® Resin	1 gal. (3.8ℓ)	20-8140-128
EpoThin® Hardener	1 pt. (0.47ℓ)	20-8142-016
EpoThin® Hardener	64 oz. (1.9ℓ)	20-8142-064



**BUEHLER**

BUEHLER LTD. - Worldwide Headquarters  
41 Waukegan Road • P.O. Box 1  
Lake Bluff, Illinois 60044-1699 USA  
Tel: 847/295-6500 • Fax: 847/295-7979  
Sales: 1/800/BUEHLER • 1/800/283-4537  
Web Site: <http://www.buehler.com>  
Email: [info@buehler.com](mailto:info@buehler.com)

#### BUEHLER GMBH - European and MESA Headquarters

In der Steele 2 • 40599 Düsseldorf  
Postfach 16 03 55 • 40566 Düsseldorf  
Telefon: (49) 211 974100 • Telefax: (49) 211 9741079  
Web Site: <http://www.buehler-met.de>  
Email: [info@buehler-met.de](mailto:info@buehler-met.de)

#### BUEHLER FRANCE

Téléphone: 0800 89 73 71  
Télécopie: 0800 88 05 27  
Web Site: <http://www.buehler.fr>  
Email: [info@buehler.fr](mailto:info@buehler.fr)

#### BUEHLER UNITED KINGDOM

Telephone: 0800 707 6273  
Fax: 0800 707 6274  
Web Site: <http://www.buehler.co.uk>  
Email: [sales@buehler.co.uk](mailto:sales@buehler.co.uk)

#### BUEHLER CANADA

10 Carlow Court, Unit #2  
Whitby, Ontario L1N 9T7  
Telephone: (905) 430-4684 • Fax: (905) 430-4647  
Sales Telephone: 1-800-268-3593  
Email: [info@buehler.ca](mailto:info@buehler.ca)

#### BUEHLER ASIA

5/F Vogue Centre  
696 Castle Peak Road  
Lai Chi Kok, Kowloon  
Hong Kong, SAR, China  
Telephone: (852) 2307 0909  
Fax: (852) 2307 0233