

Please ask for a copy of our free publication 'The Care and Use of Diamond Knives'.

'Old' knives of a different make can often be used to buy diamond knives at a discount - please ask

TAAB Diamond Knife Wetting Agent

Most new diamond knives are hydrophilic and should not present problems with edge wetting. However have you got an older knife that causes problems or is the exception to the rule? Then our wetting agent either full strength or diluted should solve your problem for several weeks before re-treatment is needed.

W101 Diamond knife wetting



Standard 35°/45°



Cryo 35°/45°



Cryo immune knife



Ultrasonic knife with controller

Diamond Knives

We are able to offer a choice of the market leading brands of diamond knives for ultrathin and semithin sectioning. All knives are guaranteed and details of their care and use are available in data sheet form from TAAB free of charge.

Diamond knives are not only for those people with tough specimens where they produce results unobtainable with glass knives, but also for the hard pressed modern laboratory where time is of the essence and results are required without time-loss. Diamond knives have the ability to cut all manner of soft and hard specimens and section samples with mixed densities within the same block. They have a remarkable tolerance for producing results from difficult specimens that makes them an invaluable tool for any modern electron microscope laboratory.

The cost of the diamond knives is more than compensated for by the speed of production of useable results from imperfect embeddings or from samples unavoidably accepted from third parties where preparation quality is unknown. Diamond knives supplied by TAAB can be resharpened an infinite number of times at a price a little over half that of a new knife.

Diatome Diamond Knives for EM

Swiss diamond knives with an enviable reputation for reliability and performance.

Diatome knives for ultrathin ambient sectioning

Standard ambient knives

The standard holder is blue anodised with the diamond is ground to a 45° angle. **We now recommend 35° as a no-cost option for all standard work being the best compromise between performance and edge life.** We can offer black anodised boats for those who prefer them. The choice of holder does not affect the purchase price. The edge lengths available are as follows:

K065/15 1.5mm, **K065/20** 2.0mm, **K065/25** 2.5mm, **K065/30** 3.0mm, **K065/35** 3.5mm
K065/40 4.0mm

Diatome Cryo Knives

Standard cryo knives

Holders for cryosectioning are normally triangular (without flotation bath) and manufactured from a special alloy. They can be specified with a flotation bath and 35° or 45° angles at no extra cost. Knife sizes available:

K065/C/15 1.5mm, **K065/C/20** 2.0mm, **K065/C/25** 2.5mm, **K065/C/30** 3.0mm, **K065/C/35** 3.5mm and **K065/C/40** 4.0mm

Cryo immune knife for sucrose droplet and frozen hydrated sections

The cryo immune knife has a 35° or 25° diamond for lowest section compression and is the first cryo diamond knife with a plateau. The 35° gives optimised section pick-up resulting in the best section quality for immunocytochemistry using a loop and sucrose/methyl cellulose droplet. This method reduces the stress applied to the section and leads to better structural preservation. The 25° knife is designed for frozen hydrated specimens. Both are available only with 3mm edge.

K065/30/C/35 3mm Diatome Cryo immune diamond knife 35° for sucrose
K065/30/C/25 3mm Diatome cryo immune 25° for frozen hydrated

Please ask about cryo 25° knife for frozen hydrated sections

Diatome Ultrasonic Knife

A totally new concept in ultrathin sectioning giving practically zero compression, thinner sections, better structural preservation and easier sectioning of 'difficult' materials. The oscillations are strictly controlled in the horizontal plane. The results at room temperature are exciting but at low temperature are exceptional.

K067/30 3.0mm Diatome Ultrasonic oscillating diamond knife with controller

Diatome Cryo Trimming Knives

For successful ultramicrotomy precise trimming of the specimen is essential. The extreme sharpness of the Diatome trimming blades ensures accurate trimming with minimum mechanical damage resulting shiny surfaces that make alignment easier and safer. All three versions can be fitted into Leica or RMC cryo ultramicrotomes:

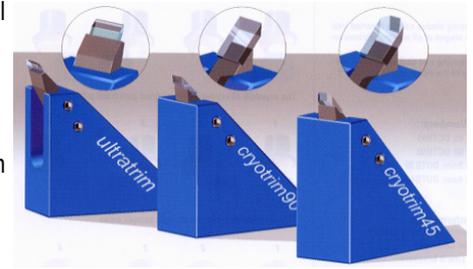
Trim 20 and Trim 45

The Cryotrim 45 produces pyramidal sides with an inclined angle of 45° and the Cryotrim 20 produces 20° sides. Both are ideal for:

- sucrose protected biological samples
- frozen hydrated samples
- polymers

K094/45 Cryotrim 45
K094/20 Cryotrim 20

For all trimming and sectioning we recommend the use of the Static Line II Deioniser (see page 21)

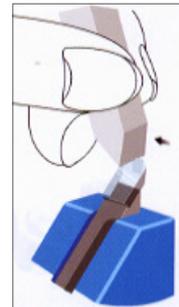


K094

Knife Cleaning Sticks

Ideal materials for cleaning diamond knives. Bevel one end to a 60° "V" with a degreased razor blade. Dip in ethanol 100% ethanol (50% for biological samples) and shake off the excess. Gently run the rod across the cutting edge without applying lateral pressure.

C097 Pithwood bundle of 10 pieces
C259 Polystyrene cleaning stick pack of 5



Diatome Diamond Knives for Light Microscopy

Histoknives for Light, Semithin and Materials Microscopy

Polished to a degree which provides excellent results for ultrathin materials sectioning, these knives are resilient enough to produce first class sections over a long period of time in the micron range for light microscopy. Available in the following sizes:

K090/40 4.0mm, **K090/50** 5.0mm, **K090/60** 6.0mm, **K090/80** 8.0mm **K090/100** 10.0mm

Histo Jumbo

A 6mm Histoknife with a water bath large enough to accept 3" x 1" microscope slide.

K090/60/J 6mm Diatome Histoknife with jumbo water bath

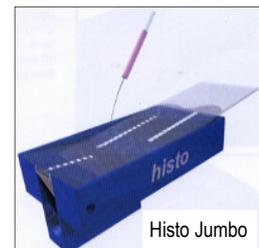
Diatome Cryohistoknife

A triangular knife with holder of special alloy suitable for low temperature cryostat sectioning in life science and materials applications.

K090/4/C Diatome 4mm Cryo Histoknife



Histo



Histo Jumbo



Diatome Knives for AFM

The high quality Diatome diamond knives are not just perfect for producing ultrathin and semi-thin sections, but also for surfacing sectioning of all kinds of biological and industrial specimens for AFM investigation. Instead of a section as for TEM, the specimen surface is investigated using AFM. In order to achieve the best results for AFM investigation, only the highest quality diamond knives should be used.

Diatome ultra AFM and cryo AFM knives are specially tested to ensure that they meet the increased quality requirements of AFM investigation. They produce extremely smooth sample surfaces and guarantee the best possible structural preservation. They are produced with a 35° angle.

K092/20 Diatome Ultra AFM 2mm

K093/20 Diatome Cryo AFM 2mm

K092/30

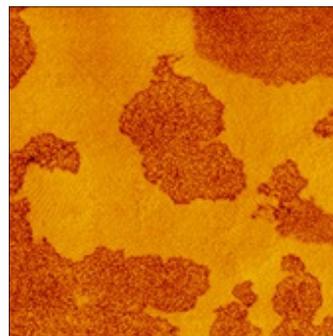
Diatome Ultra AFM 3mm

K093/30

Diatome Cryo AFM 3mm

Morphology of a blend of two SBS block copolymers with different chain-architecture. AFM tapping mode, phase image.

Rameshwar Adhikari, Institut für Werkstoffwissenschaft, Martin-Luther-Universität, Halle-Wittenberg.



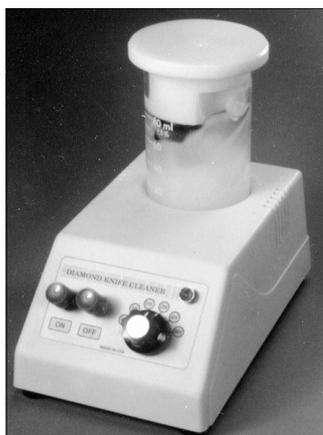
Diamond Knife for Gatan 3View®



Diatome diamond knife for fitting to Gatan 3View® ultramicrotome system for serial blockface SEM 3D reconstruction. Consists of the complete diamond shank ready to fit to the 3View® system by the customer. Alternatively the complete holder can be returned for factory fitting at no extra cost other than postage. A sharpening service is also available.

K121 Diatome diamond knife for Gatan 3View® 3D reconstruction system

Diamond Knife Cleaner



This instrument has been specially designed for cleaning diamond knives. The diamond knife (any make with a 9.5mm base) is held in a special holder which fits into a 100ml beaker mounted on top of a magnetic stirrer turning at approximately 1800 rpm. Direction is reversed twice every minute. The cleaning liquid can be distilled water or one of the mild surfactants recommended in our "Care and use of diamond knives" data sheet. The six position timer can be set from 15 minutes to eight hours. Dimensions 4¾" x 3" x 2½" high (with beaker in place 5½")

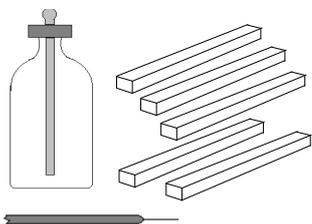
C205/1 Diamond knife cleaner 240V

C205 Diamond knife cleaner 120V

Diamond Knife Cleaning Kit

A kit for cleaning the edge of diamond knives consisting of Tween 80 solution (100mls), dropper bottle, polystyrene sticks, single bristle brush and cleaning instructions.

C262 Diamond knife cleaning kit



Microstar Diamond Knives

American knives with a huge range of holders. Each knife has a 12 month warranty against any defects. The following types of knife are available:

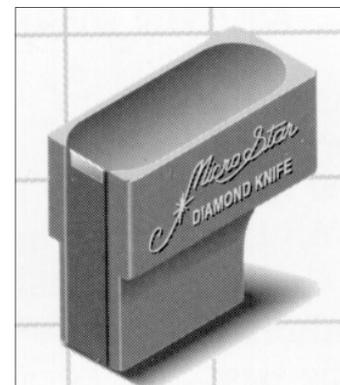
SU Standard Ultramicrotomy **CW** Cryo Wet **CD** Cryo Dry

MT Materials Science **LH** Light Microscopy **LC** Light Microscopy Cryo

There are eight different boat styles but we supply standard black anodised holder type SU with oval cavity unless otherwise instructed, or for cryo, triangular stainless steel with non-glare finish. Normal knife angle is 45° but 35° and 55° are no-cost options for some applications.

Microstar ultrathin knives Types SU, CD, CW, in sizes:

K080/10 1.0mm	K080/12 1.2mm	K080/14 1.4mm	K080/15 1.5mm
K080/16 1.6mm	K080/18 1.8mm	K080/20 2.0mm	K080/22 2.2mm
K080/24 2.4mm	K080/25 2.5mm	K080/26 2.6mm	K080/28 2.8mm
K080/30 3.0mm	K080/32 3.2mm	K080/34 3.4mm	K080/35 3.5mm
K080/36 3.6mm	K080/38 3.8mm	K080/40 4.0mm	K080/42 4.2mm
K080/44 4.4mm	K080/45 4.5mm	K080/46 4.6mm	K080/48 4.8mm
K080/50 5.0mm	K080/52 5.2mm	K080/54 5.4mm	K080/55 5.5mm
K080/56 5.6mm	K080/58 5.8mm	K080/60 6.0mm	



Microstar type SU

Microstar ultrathin knives type MT (Materials Science)

Ultramicrotomy knives suitable for difficult materials samples and not polished to the same degree as **SU** knives. Available in the following sizes:

K081/20 2.0mm	K081/25 2.5mm	K081/30 3.0mm	K081/35 3.5mm
K081/40 4.0mm	K081/45 4.5mm	K081/50 5.0mm	K081/55 5.5mm
K081/60 6.0mm	K081/65 6.5mm	K081/70 7.0mm	



Microstar type CD

Microstar light microscope knives types LH

Knives suitable for thicker sections (>1µm) on ultramicrotomes or special motorised rotaries. Available in the following sizes:

K082/40 4.0mm	K082/45 4.5mm	K082/50 5.0mm	K082/55 5.5mm
K082/60 6.0mm	K082/65 6.5mm	K082/70 7.0mm	K082/75 7.5mm
K082/80 8.0mm	K082/85 8.5mm	K082/90 9.0mm	K082/95 9.5mm
K082/100 10.0mm			

Microstar light microscope knives types LC

Knives suitable for cryostat sectioning (>1µm) or low temperature materials EM. Available in the following sizes:

K083/40 4.0mm	K083/45 4.5mm	K083/50 5.0mm	K083/55 5.5mm
K083/60 6.0mm	K083/65 6.5mm	K083/70 7.0mm	K083/75 7.5mm
K083/80 8.0mm	K083/85 8.5mm	K083/90 9.0mm	K083/95 9.5mm
K083/100 10.0mm			