WHITEPAPER

Microscope Slides: More Than Meets the Eye

BIOCARE MEDICAL

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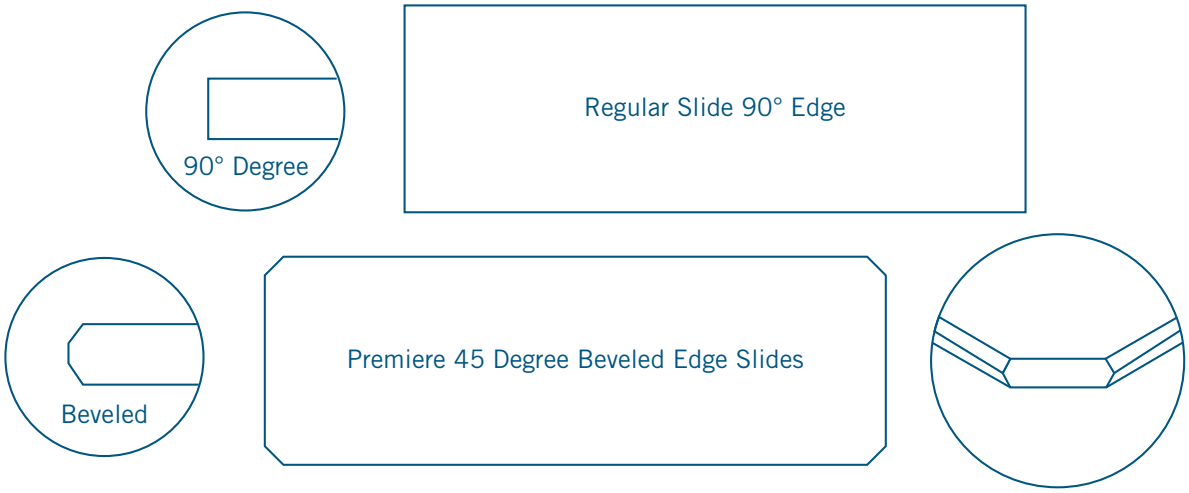
Microscope slides are a well-known laboratory staple. Universal and easily recognizable, they may seem a relatively straightforward purchase. However, a laboratory's choice of slides can have significant implications for their staining procedures.

Slides are generally measured as 3 x 1 inch in US customary units or 75 x 25 mm in metric units per slide. This difference may seem minimal, but since there are 25.4 mm in an inch, a US customary 3 x 1-inch slide is 76.2 x 25.4 mm when converted to metric. Therefore, slides sold in metric units are slightly smaller, which may affect their ability to be processed in laboratory instruments such as cover slippers and automated slide stainers.

Most slides sold on the market have straight, ninety-degree cut edges and corners. However, some brands of slides may have beveled edges or feature clipped or nicked corners. These modifications are designed to make the slide easier and more comfortable to manipulate, but they may affect how certain instruments grip the slides.



Beyond their shape, the chemical coating of microscope slides also plays a significant role in their effectiveness. Slides may be coated with poly-L-lysine, silane, or other proprietary surface chemistry to confer a positive charge.[1] "Charged" slides take advantage of electrostatic forces to bind tissues sections to their surface more strongly than plain glass slides.

Chemical coatings can also confer either hydrophobic or hydrophilic properties to the slide. The effects of these coatings can easily be seen if a drop of water is pipetted onto their surface. If the water forms a tight droplet, then it is most likely a hydrophobic slide. Conversely, if the water spreads out across the slide surface, then the slide is most likely hydrophilic.

Hydrophobic slides may facilitate faster adhesion of tissue sections from a water bath. However, hydrophilic properties may allow technicians to refloat tissue sections on the water bath more easily if needed. They may also facilitate better spreading of reagents across their surface. Laboratories should fully consider the applications of both types of slides before making a purchase.

The storage conditions for microscope slides are also vital to maintaining their quality. Users should always abide by the use-by date indicated on the packaging and keep them in a temperature and humidity-controlled environment.

1. Adhesive & charged microscope slides for histology laboratories. Newcomer Supply. (n.d.). Retrieved November 08, 2021, from https://www.newcomersupply.com/products/slides-cover-slips/adhesive-charged-microscope-slides/.
2. Kiernan, J A., (1999). Strategies for preventing detachment of sections from glass slides. Microscopy Today v. 99-6, p. 22-24.