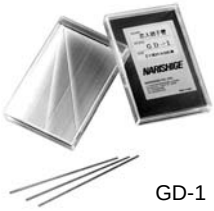
NARISHIGE WEB NEWS

No.004 (June 15, 2007)

Different Types of Glass Tubing

There are several types of glass capillaries. Do you know what makes them different? In this issue, we will explain the differences and characteristics of glass capillaries.

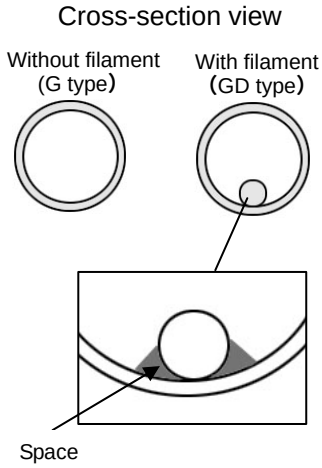


GD-1

◇◆ Models ◆◇

There are four types of glass capillaries: (G) indicates normal type, (GD) indicates type with filament, (GC) indicates sterilized type and (GDC) indicates sterilized type with filament. These capillaries are available in the following outer diameters: 1mm, 1.2mm and 1.5mm. The normal type (G) is also available in 2mm and 3mm outer diameters. In addition, we have a 1mm thin-walled glass capillary (G-100) that has a bigger inner diameter. Glass rods are also available (G-1000).

◇◆ Characteristics of Glass Capillaries with Filament (GD type) ◆◇



One of the biggest differences in glass capillaries is whether or not it has a filament in the tubing.

The glass capillary is internally a perfect circle. As the tip gets smaller, fluid is more affected by surface tension and does not flow up to the tip. The capillary with filament has a thin glass rod in it. The filament produces two spaces inside the tubing. This allows the capillary phenomenon to work and leads the fluid up to the tip. In other words, the space created by the glass rod breaks surface tension and permits a smooth flow of fluid.

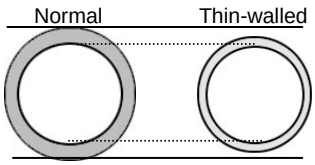
It is said that fluid does not flow up to the tip without filament when the tip diameter is smaller than 1um.

◇◆ Characteristics of Sterilized Glass Capillaries (GC type) ◆◇

GDC-1

The normal type of capillary (G) is washed in an ultrasonic cleaner prior to packaging. Sterilized capillaries (GC and GDC) are further exposed to ultraviolet light to be sterilized and then vacuum-packed. Vacuum packing minimizes contamination by dust due to exposure to air and handling. These capillaries are suitable for experiments requiring sterile conditions.

◇◆ Characteristics of Thin-walled Glass Capillaries (G-100) ◆◇



Comparison of pipette tips

The inner diameter of the normal glass capillary is 60% of the outer diameter, while it is 80% in the thin-walled capillaries. When the inner diameter is equal in the two types of the pipettes, the thin-walled type has a smaller outer diameter than the normal type has. This helps diminish damage to cells. On the other hand, the thin-wall type is more difficult to process into a pipette because it is not as strong as the normal type.

◇◆ Characteristics of Glass Rods (G-1000) ◆◇

The glass rod is high intensity because the inside is not hollow. It is suitable to bore a small hole in cells or to cut out a sample in micro dissection.

NARISHIGE Customer Support Center
E-MAIL: sales@narishige.co.jp