

Sedgewick-Rafter Counting Chamber

The Pyser-SGI S50, S52 & S53 Sedgewick Rafter counting cells are used widely in water analysis, culture inspection and for other applications where particles per unit volume in fluid must be determined.

Pyser-SGI's Sedgewick-Rafters are available in glass and plastic versions. The glass cell is designed for repeated cleaning and re-use, whereas the plastic version is designed for either a single or finite use only. Each chamber is supplied with one type S51 cover glass.

The Sedgewick-Rafter Chambers consists of a 2mm thick clear base slide (76 x 40 mm), onto which has been built a rectangular chamber. On to the top of this chamber is placed a cover slip (see Fig A).

This chamber is 50mm long x 20mm wide and 1mm deep. When filled with liquid and with a cover glass placed over the chamber, a 1millilitre (1mL) volume of liquid is trapped. The base of the gridded version is marked with a grid of one thousand 1mm squares. When used under a low magnification light microscope, each of the visible grid squares equates to a volume of one microlitre (1 μ L) of liquid.

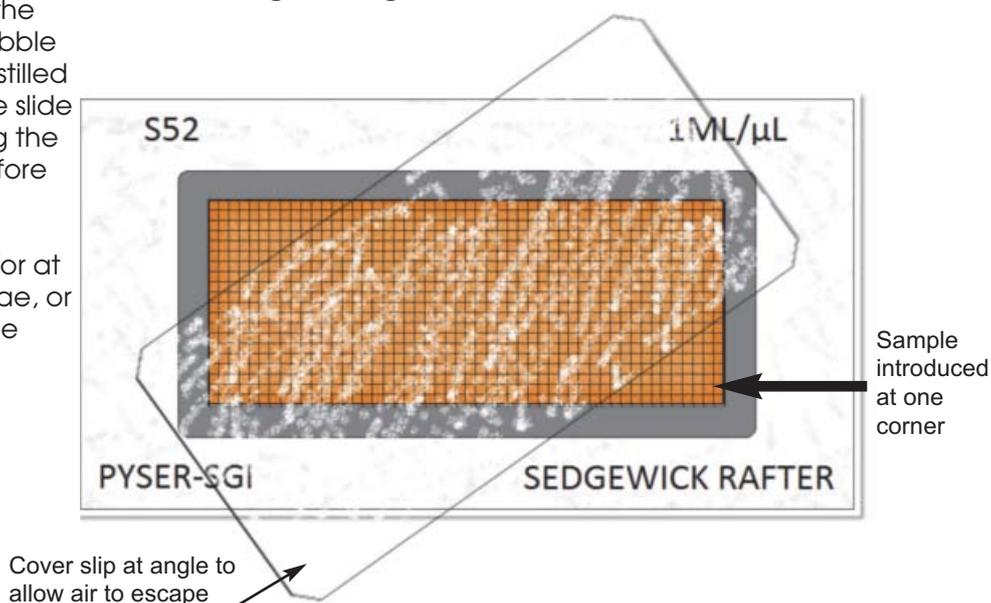
The Grid assists the counting and calculation process, by clearly defining a known sample volume. Counting in strips is easier, no need to use reticle grids or know the precise area of your field of view. This makes Pyser SGI's S50 & S52 Gridded Sedgewick-Rafter Cell perfect for use with a Stereo Zoom Microscope without the need to carefully set the precise zoom/magnification before counting the sample.

The S53 plain base version may be viewed directly or with a Whipple Grid reticle in the microscope eyepiece, to assist with detailed observation if required. For precise sample preparation and calculation methods, you should follow your own internal or published procedures.

Filling Method & Usage

The cell can be used with either living or preserved material. To fill the cell, place the cover glass across the chamber top (Fig A). This allows the air bubbles to escape during the filling procedure. The sample is then taken into a 1mL wide mouthed pipette and then carefully transferred to the chamber. Do not overfill the chamber, because the volume of the sample in the chamber must be known exactly and the cover glass must not float free, but held onto the cell walls by surface tension. During counting water may evaporate from the chamber. To prevent gas bubble formation, a small drop of distilled water may be placed on the slide outside the cell, just touching the cell wall and cover glass. Before the cell a count is made the Sedgewick-Rafter chamber should be allowed to stand for at least 15 minutes to allow algae, or other particles, to settle to the bottom.

Filling a Sedgewick-Rafter Chamber



TECHNICAL NOTES

COUNTING CHAMBERS



Pyser SGI's Sedgewick-Rafter Chambers : Available in two materials:

S50 – Plastic Gridded Chamber

An economically priced cell, for one time (or possibly several time) use and for educational/training exercises. Generally, we do not recommend the S50 plastic version for the professional user. The softness of the plastic means it is easily scratched and otherwise damaged. However, most laboratories who do use the plastic version see it more as a "throw away" or consumable, which may best suit certain applications.

S52 – Glass Gridded Chamber

A serious reusable tool for the professional user. The cell is made of high quality optical glass with a chromium surface image. It is intended for continued professional use and whenever using phase contrast.

S53 – Glass Plain Chamber

Ideal for APHA methods or where large plankton are being analysed

S51 – Cover Glass

Both versions above are supplied with a cover glass. Additional spare cover glasses are available to order from stock.

Each of the chambers have a central cell that is filled with the sample fluid and a cover glass limits the volume to precisely 1ml. Gridded versions are subdivided into microlitres (e.g. μL). Plain version may be used with a Whipple Grid reticle in the microscope eyepiece.

Ordering Information

Pattern	Description	Order Code
S50	Sedgewick Rafter Counting Chamber (plastic). With cover glass	02C00415
S51	Cover glass for Sedgewick Rafter Cells S50, S52 & S53 (spare)	02C00416
S52	Sedgewick Rafter Counting Chamber Gridded (glass). With cover glass	02B00417
S53	Sedgewick Rafter Counting Chamber Plain (glass). With cover glass	02B00418



Click on picture to view video

Foot Note: Over the years the name of these slides has been incorrectly spelt as Sedgewick Rafter. The original methods were developed by William Thompson Sedgewick and George W. Rafter, so the true spelling should be Sedgwick Rafter.



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