Hemacytometer Instructions for Use

(Part No. M36)

Motile Microalgae

If you are using motile microalgae, it is easier to kill the cells before counting by using the following procedure:

1. Place a well-mixed, 1-mL culture sample in a deep-well porcelain plate (~30 drops when using a fine-tipped transfer pipette).
2. Add one drop of 5% formalin, mix well and proceed to #3.

Nonmotile Microalgae

If you are using nonmotile microalgae, it not necessary to kill the cells.

3. Place long dimension of coverslip horizontally parallel to the long dimension of the slide so that both central counting grids are covered by the V-shaped grooves and exposed for easy access.
4. With a fine-tipped transfer pipette, mix culture samples well, then place one drop in each V-groove until the culture is drawn under the coverslip.
5. Using a compound microscope on the 10X objective (100X magnification), count the number of cells in the central 25 squares, which are further divided into 16 squares.
6. For the highest degree of accuracy, it is best to count all the cells in both sets of grids (we recommend using a hand counter while counting), average the two sets, divide by .98 and multiply by 10,000. This figure is the number of cells in 1 mL of your microalgae culture.
7. For a quicker, less accurate count, you can do the following:
   a. For a low-density culture, count all 25 squares in one set of grids and multiply by 10,000.
   b. For a high-density culture, count 5 squares of one grid set, multiply by 5 and then multiply by 10,000.
8. While counting, check sample for any contaminants like ciliates, protozoans, diatoms or filamentous algae. Use a 40X lens for checking blue-green algae contamination. If you are using motile algae, you may want to check a sample without killing the algae, since most contaminants are motile and easier to see.
9. Carefully remove the coverslip and gently clean the surface of the hemacytometer and coverslip with tissue or lens paper. Avoid scratching the slide surface.
10. Flush transfer pipettes with distilled water between samples. You may wish to set them in a light chlorine bath when not in use.

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