M2 MULTI-MOLD™

Concentration Calculation

The M2 incorporates standard impactor design characteristics including a rectangular nozzle with standard inlet and exit slit geometry. Air particles are deposited onto a laboratory accepted proprietary adhesive media. The particle deposition measures approximately 1.1mm by 14.5mm (area approximately 16 mm^2) at 15 lpm. Therefore, industry standard techniques can be used to obtain particle concentrations.

ISSI recommends that particle concentration be calculated using the trace length and microscope field diameter method. A minimum of 15% of the entire trace should be examined or a minimum of 100 mold spores counted (whichever comes first). A magnification of 400X minimum should be used for proper identification and speciation. The M2 provides pre-printed traverse marks on the collection slide to assist in examination (eg., the 3rd pre-printed mark for both Side A and B corresponds to the center of the trace area).

The calculation for particle concentration per cubic meter of air is as follows.

Calculation 1

Use this formula to determine the actual air volume collected in cubic meters (m^3).

Sampled air volume (m^3) = (sampling rate (liters/minute)/1000) × number of minutes

Calculation 2

Use this formula to determine the length of the sample trace counted (mm) based on the microscope field of view and number of traverses.

Trace length counted (mm) = microscope field diameter (mm) × number of traverses

Calculation 3

Use this formula to determine concentration of particles or spores (particles/m^3 or spores/m^3). Insert the calculations for Trace length counted and Sampled air volume as noted above.

M2 MultiMold trace length = 14.4 mm

$$\text{Spores/m}^3 = \frac{\text{Trace length [14.4mm]}}{\text{Trace length counted (mm)}} \times \frac{1}{\text{Sampled air volume (m}^3\text{)}} \times \text{Particle Count}$$