

FAQ01-03 What is Density?

Material density tables (in gm/cc) are commonly available in the QCM User Manual, chemical handbooks, and on the Internet. If you cannot find the density of your material, it can be calculated empirically using this method:

1. Place your substrate adjacent to a new quartz sensor.
2. Set QCM Density to an approximate value.
3. Set Z Factor =1 and Tooling =100.
4. Deposit approximately 1000 to 5000 Å of material.
5. Use a profilometer or interferometer to measure the substrate's film thickness.
6. The actual density value is calculated by:

$$\text{Density}_{\text{ACTUAL}} = \text{Density}_{\text{APPROX}} \times \frac{\text{Thickness}_{\text{QCM}}}{\text{Thickness}_{\text{ACTUAL}}}$$