

How to Read a Thermometer

Thermometers should be handled carefully because they are tubes of glass filled with either mercury or colored spirits. When pushing them into a stopper, use the same precautions you would for glass tubing. Use some lubricant and gently push.

Laboratory thermometers should NOT be shaken like our home variety. To lower the temperature, just cool them. Usually they are either partial or whole immersion thermometers. This means that the bulb may be either partially submerged in the liquid or must be totally submerged in the liquid to accurately register the temperature.

Place the thermometer in the material whose temperature is to be measured. The thermometers used in laboratory experiments do not need to be shaken down. If you are measuring the temperature of a material while it is being heated, make certain that you do not let the thermometer rest on the bottom of the container and that the bulb is submerged in the material itself.

To read the temperature indicated on a thermometer, your eye should be at the level of the liquid in the thermometer. Read the thermometer to the appropriate number of significant digits. For example, a thermometer on which the heavy or extended lines are marked 10, 20, 30 . . . , should be read to the nearest 0.1 degree. On this thermometer each degree is marked, hence you can estimate to the tenth of a degree. If a reading falls exactly on the second fine line above 30, it would be read as 32.0. If it falls exactly on the heavy or extended line marked 30, it is read as 30.0.

Some thermometers may have fine lines every two degrees. Then the thermometer can be read to the nearest 0.5 degrees.

First examine the scale that is etched on its side. In the drawing below, each degree is divided into smaller divisions. The number of divisions sometimes varies, so it is important to first look the scale.

Always check the scale of any thermometer you use to make certain you read it as many significant digits as appropriate.

