

## Using the Abbe Refractometer

Text from the audio portion of the [Quicktime Video](#)



The refractometer is often stored with a piece of tissue in the prism assembly to keep the prism glass from being scratched. Open the prism assembly and remove the tissue.



Use a pipet to apply your liquid sample to the prism, being careful not to let the glass pipet tip touch the prism since this may scratch the soft prism glass. Add enough sample to achieve a thin film across the whole prism, typically 3 to 4 drops.

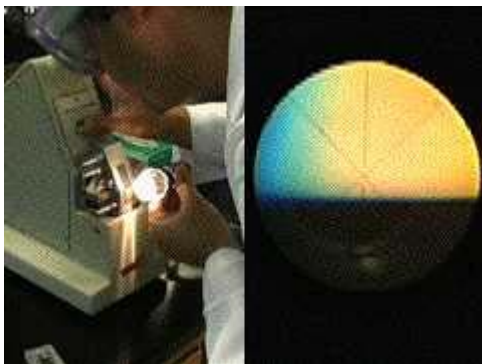


Close the prism assembly and turn on the lamp using the switch on the left side. (On some models the switch may be in the power cord.) Adjust the lamp so the light shines on the prism and look through the eyepiece.

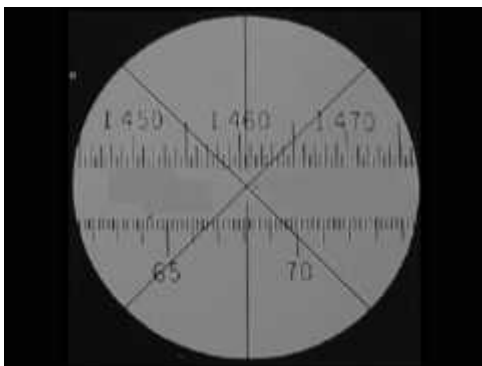


If you are close to the index of refraction of your sample you should see that the view in the eyepiece shows a dark region on the bottom and a lighter region on the top. If you do not see a light and a dark region, adjust the handwheel on the right side of the instrument until you do.

Before making the final adjustment, it may be necessary to adjust the lamp position and to sharpen the borderline between the light and the dark regions using the compensator dial on the front of the refractometer.



Once you have a crisp demarcation between the light and dark regions, use the handwheel on the right hand side to place this borderline exactly on the center of the crosshairs as shown. This is a view of what it should look like when correctly adjusted.



To read the index of refraction, depress the switch on the left hand side of the refractometer until you see the scale through the eyepiece. This is a view of what the scale will look like. The upper scale indicates the index of refraction. By carefully interpolating you should get 4 decimal place accuracy. You may want to pause the video and read the value now. The example shown here has a Refractive index of 1.4606.



After you are finished, clean the refractometer. First use a tissue to dab away most of your sample. Then wash the prism with a little solvent, we usually use isopropyl alcohol. A dabbing motion rather than a rubbing motion is preferred to minimize the chances of scratching the prism.



After you have finished cleaning the prism, place a clean tissue in the assembly. Before you leave make sure that the light has been turned off.