Instructions for using the Reichert Abbe Mark II Refractometer

The Abbe Refractometer can be used to measure the index of refraction of liquids and solutions with a precision of four decimal places and the temperature at which the measurement is made. Remember that the refractive index of a solution typically decreases with increasing temperature.

- The Power Switch is located in the lower right corner of the front panel. Turn the instrument on.
- Move the illuminator arm to the proper position, about 45 degrees below vertical.

1. Open the prism assembly covers and remove the protective lens tissue. Clean the measuring prism surface with alcohol and then distilled water. Wipe with a clean lens tissue, but do not wipe the measuring prism while it is dry. Any residue left on the prism can affect the accuracy of the readings.
2. Turn the Mode Selector on the front panel to n_0.
3. Apply a sample solution to the measuring prism surface using a glass dropper. Close the prism cover and position the illumination arm so that the exposed face of the upper prism is fully illuminated.
4. Turn the dispersion correction wheel so that the crosshair adjustment access hole is at the six o’clock position.
5. Rotate the adjustment control counterclockwise to position the shadow line at the bottom of the field of view.
6. Rotate the eyepiece to bring the crosshair into focus.
7. Move the shadow line to the crosshair reticule with the course adjustment control.
8. Rotate the dispersion correction wheel to eliminate any red or green color at the edge of the shadow line.
9. Turn the adjustment control to center the shadow line to the crosshair. The shadow line must be perfectly centered to obtain an accurate reading.
10. Depress the read button. The value of the test sample will be digitally indicated in the display window. Depressing the TEMP button will activate a temperature sensing device located in the measuring prism. The display will digitally indicate the actual temperature of the measuring prism and sample.
• When finished, clean the measuring prism, and leave the prism assembly closed with a dry clean lens paper inside.

The numbered instructions come verbatim from the manual which may be obtained from Mr. Mike Foster in WCM 401.

As a calibration check, you may test distilled water. Distilled water has an index of refraction of 1.3330 less 0.0001 for each degree above 20° C.