

Refractometers

A refractometer is a simple instrument used for measuring concentrations of aqueous solutions. It requires only a few drops of liquid, and is used throughout the food, agricultural, chemical, and manufacturing industries for such as COOLANTS and STAMPING LUBES.



How a Refractometer Works

When light enters a liquid it changes direction; this is called refraction. Refractometers measure the degree to which the light changes direction, called the angle of refraction. A refractometer takes the refraction angles and correlates them to refractive index (nD) values that have been established. Using these values, you can determine the concentrations of solutions. For example, solutions have different refractive indexes depending on their concentration in water.

The prism in the refractometer has a greater refractive index than the solution.

Measurements are read at the point where the prism and solution meet. With a low

concentration solution, the refractive index of the prism is much greater than that of the sample, creating a large refraction angle and a low reading ("A" on diagram). The reverse would happen with a high concentration solution ("B" on diagram).

