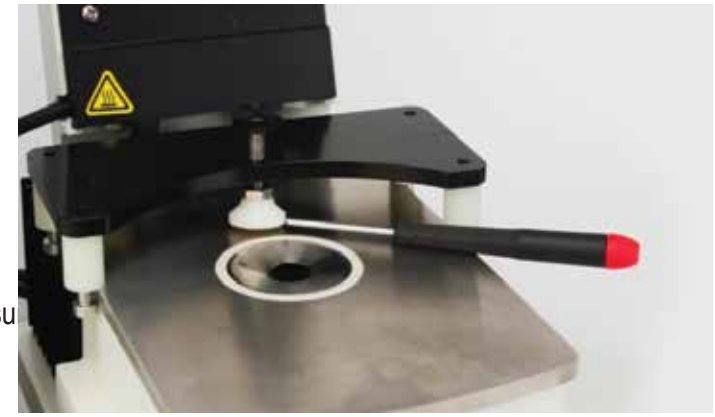
RUDOLPH RESEARCH ANALYTICAL

White Papers

Refractive Index - RI Measurement of Solids & Films

RI Measurement of Solids, Semi Solids and Films.



RI measurement of solids and semi-solids is useful in labs for monitoring quality to insure consistency of transparency, pigmentation, or batch quality. Refractive Index might be measured on incoming materials or finished products. Highly accurate measurements are possible with the right refractometer and a method to measu

Instrument: J457 Refractometer with Solid Measurement Kit
Application: Measuring RI of solids, Semi Solids, Films, Plastics, Resins
Material Applications: Films, glass, plastics, resins, tapes, semi-solids, silicones.

The Rudolph J457 refractometer combined with a Rudolph Research Solid measuring kit may be utilized as follows to measure the RI of solids, many films, sheet goods, and semi-solids.
You may view a short demonstration of measuring RI of solids below or contact us for a more detailed explanation.

Refractometer Video, Refractive Index Measurement of Solids, Films, and Semi-Solids

To prepare to measure a Solid Sample the following are required. Prepare a disc shaped sample 14mm in diameter using the hole punch supplied with the solid kit
Used as an example is a sample punched from a plastic sheet. Therefore, any solid that can be prepared to a 14 mm disc with a smooth face can be measured. The thickness is not a concern however the sample must have a flat, optical face.
If the sample is soft such as a silicon the sample can be placed right on the prism. If the material is more ridged such as the plastic sample we are using you will need an “Optical Coupling Fluid” The fluid you use must have a higher R/I than the sample you are measuring.
The solid measurement kit is designed to fit the Rudolph J457 Refractometer.
Rudolph's J457 is rated to the 5th decimal place for liquids. The accuracy for solid materials will depend on the sample type and preparation.
The J457 Refractometer from Rudolph Research with the solid measurement kit can measure a wide range of solids. This is useful in applications where the RI of a solid is important to maintain quality control and when matching like materials.

For additional information on RI measurement of Solids and Films, see the Rudolph Research Refractometer Product Line