



APPLICATION NOTE – PHARMACEUTICAL PRODUCTION

Application Need: There is an important need and requirement for measuring the refractive index value of various pharmaceuticals. Refractive index (RI) is used to determine the purity of the sample. Pharmaceutical manufacturers must measure the RI of raw materials before placing them into their production schedule. In addition, the R&D and QC Laboratories may need to measure the RI of the pharmaceutical product to monitor reaction changes.

The Problem: The manual, or Abbe refractometer, projects a visible shadowline on the crosshairs in the instrument. This shadowline is often blurry. Operator misinterpretation of the shadowline can result in significant measurement errors. Also, RI is temperature dependent. In order to standardize readings, they must be either controlled or corrected to a standard reference temperature (typically 20 or 25 per the US and EU Pharmacopoeia).

The Solution: Reichert automatic digital refractometers are ideal for measuring RI. Here is why:

- ✓ Sample color or opacity does not effect automatic refractometers. Fully automatic refractometers are also known as reflected light refractometers because they utilize the light that is reflected by the sample for analysis. ✓ Reduced operator error. An electronic detector is used instead to take the measurement.
- ✓ Temperature may be controlled via an external water bath circulator on the AR6 Series, ARIAS, and MARK models, or by a built in Peltier Thermal Control System on the AR7 Series.
- ✓ To ensure the refractometer and sample have stabilized at a given temperature, the AR7 Series, AR6 Series, ARIAS, and MARK III refractometers utilize an exclusive feature known as Automatic Temperature Equilibration Detection.

Product Recommendations:

AR7 Series Automatic Refractometers, Reichert Cat # 13107000 & 13107700 **AR6**

Series Automatic Refractometers, Reichert Cat # 13106000 & 13106600

r²i300 compact Automatic Refractometer, Reichert Cat # 13980000

AR200 Digital Handheld Refractometer, Reichert Cat # 13950000

Brix/RI-Chek pocket Digital Handheld Refractometer, Reichert Cat # 13940000

ARIAS Optimatrix 500 Semi-Automatic Refractometer, Reichert Cat # 1310499SA

ABBE MARK III Refractometer, Reichert Cat # 1310488M