

VISCOpro 2000 provides real-time, temperature-compensated viscosity control for optical lens coating



RESULTS

- Improves yield by reducing scrap
- Minimizes amount of solvents necessary in the process
- Allows operators to maintain control over the coating solids, regardless of temperature
- Eliminates the need for costly destructive testing procedures
- Offers traceability of the product throughout the process



PAC's 372 sensor is designed for use in small-diameter process loops.

APPLICATION

Viscosity control of optical coatings

CHALLENGE

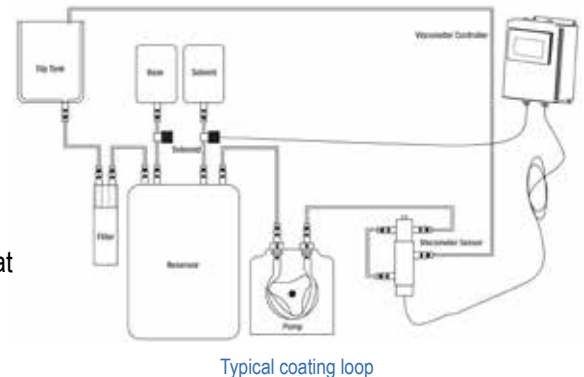
For optical lens manufacturers, managing the coating thickness is a critical step in the final stage of production for eye wear solutions like eyeglasses, sun glasses, safety glasses, ski goggles, helmet visors, and other eye protection products. When coating optical products like eye wear, it is necessary to maintain a uniform thickness throughout the manufacturing process. Fluid viscosity is an important measurement of the ultimate coating thickness, so it's important to monitor the fluid viscosity in-process to ensure final coating characteristics meet the required specifications. It is necessary to eliminate temperature fluctuations in the process, because even slight variances can impact viscosity, but not necessarily impact the solids-to-solvent ratio. Therefore, it is necessary to implement an approach that negates the effects of temperature fluctuations in the process.

SOLUTION

Determining temperature-compensated viscosity (TCV) is beneficial in the coating process. TCV determines the viscosity of a fluid at a reference temperature that is different from the actual process temperature. It mathematically removes the variation in viscosity caused by temperature to determine if the change in viscosity is being altered by the percent of solids present.

PAC's Cambridge Viscosity VISCOpro 2000 viscometers are designed to determine temperature-compensated viscosity to provide accurate, in-line measurements.

Prior to implementing a viscometer, it is important to first establish a viscosity/temperature profile for the coatings, that accommodates the specific viscosity of the coatings used for each product type.



TCV is true driver of the optical coating process. The real-time data from the VISCOpro allows customers to identify and resolve issues before they impact product quality. With TCV, optical customers are able to confirm viscosity data with solids data to paint a picture of the molecular weight, without actually being required to measure the molecular weight.

The VISCOpro 2000 automatically controls viscosity, allowing customers to reduce scrap and improve quality. By maintaining the coating solids at the minimum levels needed to meet product quality specifications, the VISCOpro 2000 helps to reduce operating costs.

In addition, it eliminates the need for destructive testing, and offers product traceability throughout the manufacturing process. For more information about the VISCOpro 2000, visit us online at www.paclp.com.

“We found TCV closely approximates the solid levels. It allows us a relatively large window of operation with the pot life of the material and continuous measurement capability, and reduces the amount of off-line testing and manual adjustment that might otherwise have to be done.”

– *Process Engineer, Optical Coating Company*