

Application note

Moisture in pigments for paints and plastics

Benefits:

The advantages of using the Panametrics aluminum oxide moisture sensor are

- Equilibrium times are short,
- The sensor can be installed as a transmitter or point of use analyzer, or
- A single multi-channel analyzer can accept inputs from multiple sensors.



Summary

Moisture is measured in pigments for paints and plastics. Pigments are colored particles normally in a powdered form.

Application

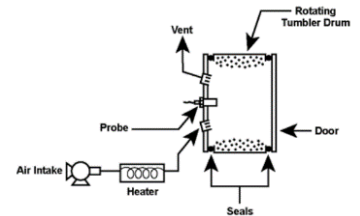
The presence of moisture in a vacuum-tumbler-dried pigments that are dispersed in paints and plastics causes undesirable changes in the physical and chemical properties of the product. Warm air and the tumbling action remove moisture from the pigment.

Challenge

In the past, complex laboratory assessments had been used to measure the moisture content in the pigments. This method would require grab sampling and time to process the samples at the laboratory, thus causing costly production delays.

Solution

The Panametrics aluminum oxide moisture sensor can monitor the moisture content of the warm dry air that enters the tumbler and can monitor the moisture in the tumbler or at the outlet of the tumbler. As the moisture content of the outlet gas approaches the moisture content at the inlet, this is a good indication that the pigment is dry enough for production. Empirical testing can validate a outlet moisture and duration at that moisture content that will lead to the best results.



Application specifications

Moisture content range: 100 to 1,000 ppmv

Dew point range: -40° to -20°C (-40° to -4°F)

Operating temperature: < 50°C

Operating pressure: 14.7 psia (101.3 kPa)