



Moisture in polymeric reaction mixture

Summary

The presence of moisture in a polymeric mixture inhibits the rate of product formation and causes unwanted byproducts to be formed.

Application

A radioactively initiated polymerization is evaluated by utilizing a hygrometer to measure and determine the effects of moisture on the polymeric reaction mixture.

Challenge

One moisture probe is used to monitor the inlet blanketing gas for the reactor headspace to ensure that this gas is dry. Another moisture probe monitors the ppmw moisture content directly in the liquid feed stream. The liquid phase consists of organic monomers utilizing methylene chloride as a solvent. The polymerization process is radioactively initiated. This approach is generally applicable to most other polymerization processes which occur in this type of batch reactor.

Application specifications

Gas moisture content	<10 ppmV
Liquid moisture content	< 1 ppmW
Operating temperature	25°C (77°F)

Benefits:

The Panametrics aluminum oxide moisture sensor is ideal for this application as it can be

- Used in both the gas and liquid applications interchangeably
- Can be installed as multiple transmitters, or
- A single multi-channel analyzer which can accept inputs from multiple sensors.



