Panametrics
a Baker Hughes business

Moisture in polymeric reaction mixture

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.

Summary

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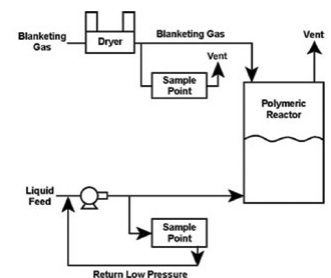
Application

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: 25ºC (77ºF)

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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