



Innovative Measurement Solutions

Application Notes



Dewpoint in Hopper Dryer

Description

Plastic dryers now account for approximately 10% of our business and are one of the most rapidly expanding segments. Hopper dryers are of the twin tower, heat reactivated type. Dry air is circulated by a fan at slightly above atmospheric pressure. An external heater takes the -40 °F dry air and raises the temperature as high as 40 °F. The hot dry air enters the bottom of the cone shaped hopper and exits the top.



Problem:

The dryer the inlet air, the faster the Polymer dries. Most manufacturers of Polymers specify drying time based on the inlet temperature and -40 °F dewpoint. High dewpoints will increase drying time and may cause manufacturing defects.

Points to consider:

Two potential problems exist with this application. First, excessive temperatures may reach the sensor. The use of a cooling coil can bring this temperature close to ambient. Second, many polymers give off chemical vapors when heated. One family of compounds are the acetaldehydes. These are aggressive and will attach the moisture sensor. However, dryer desiccant will remove most of these compounds. Therefore, return (wet) leg sampling cannot be recommended on a continuous basis.

Sensor Range: XTR-65 (-85 °F - +68 °F)

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