

Tablet Coater Temperature

APPLICATION

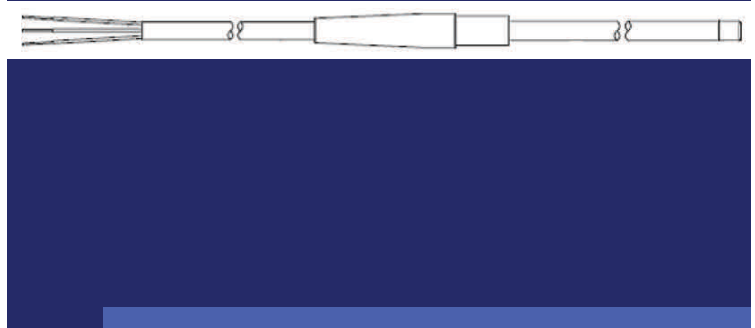
Need to monitor the changing temperature of a tablet bed inside a tablet-coating pan.

A tablet coater is a rotating drum with baffles, similar to a cement mixer, which keeps the tablets well mixed. Concurrently the tablets are being sprayed via nozzles inside the unit, with a desired coating. The tablets during the coating process must be held at a constant temperature. It is necessary to monitor the temperature of the tablets and not the ambient air in the coater.

CHALLENGE

Sensing element must be inserted into a bed of tablets, instead of a fluid. Due to the irregular shape of the tablets, the surface contact with the probe is not consistent like a fluid.

The constantly moving tablets must be modeled as a fluid. This is not a perfect model and in order to measure the tablet temperature, a very fast response time is required. The tablets will be making frequent but short contact with the sensor. It is important the sensor reads only the temperature of the tablets and not the surrounding air.



Description

SOLUTION

Design a tip sensitive, fast response probe. Burns' engineers designed a copper tipped probe that serves a dual role. Copper's excellent conductive properties allow the probe to respond very quickly to any changes in temperature. The probe is able to sense the temperature of the tablets as they come into contact with the tip. By isolating the sensing area of the probe to the tip, it is able to measure the temperature of the tablets only and not the surrounding air. The probe is held in place with a compression fitting, allowing for variable depths of penetration into the bed of tablets.