



Application Notes

Moisture Measurement in the Soap Manufacturing Process

Moisture content of soap pellets differs depending on the desired characteristics of the soap bar. On-line moisture measurement at the exit of the Spray Dryer/Pelletizer provides immediate feedback on moisture levels enabling more rapid optimization of the process upon start-up, on-going cost savings from more efficient usage of the drier, and consistent high quality product.

Soap Production Process

Soap results from a saponification reaction between fat, oil or fatty acids and inorganic water-soluble bases. The fats are commonly beef or mutton tallow, coconut or palm kernel. After pretreatment of the fats/oils to eliminate impurities and impart color or odor, saponification by continuous or batch process results in liquid soap, also known as neat soap, and the by-product glycerine. The latter is removed and refined, and the liquid soap enters a vacuum spray drier which dries the soap prior to it entering a pelletizer.

The pellets are stored in pellet bins before undergoing their final conversion into bar soap.

Gauge Installation

Moisture measurement is made at the exit of the pelletizer, the 4-20 mA output can be used to control steam pressure in the heat Exchanger which influences the moisture content of the pellets. The gauge is installed at an angle of 20° to the horizontal in order to minimize specular reflection. If the exit chute is enclosed, the product can be viewed through either a viewing window or an insertion probe.

Measurement Performance

Measurement	Location	Range %	Typical Accuracy %
Moisture	Exit of pelletizer	9-15%	0.25%