

Moisture in Breakfast Cereals

Application Briefs - Human Food Products

Knowledge of the moisture content at the exit of the cooker, cooker extruder and exit of the toaster, yields important information which can be utilized to maintain the consistent form, taste and texture of the cereal in addition to optimizing product yield, reducing scrap and saving on energy costs. On-line measurements give instantaneous information, enabling tighter process control than can be obtained through lab analyzed data.

Cereal Production Process

Processes vary, but one such example might contain: a Mixing stage where dry and liquid ingredients are mixed, Cooker, Extruder or Former, Cutter, Cooler, Flaking Roll, Dryer/Toaster, Froster/Sprayer and Dryer.

Measurement Location

Moisture measurement at the exit of the Cooker, prior to the Former, reduces the quantity of misshapes through product sticking or disintegrating in the flaking process. Moisture measurement post Toaster enables maximization of final moisture, this optimizes yield, without compromising taste, texture and shelf life characteristics.

Gauge Installation

Typically the gauge is installed over a conveyor, approximately 8" from the product. It is important to maintain sufficient product bed depth to cover the conveyor, and continuous product flow, especially if the gauge is used in closed loop control of the toaster or dryer. The gauge is best positioned at a location several feet from the exit of the toaster/dryer as this gives the product a chance to reach a degree of equilibration. If possible measurement should be made on well mixed product; an ideal location is after a short drop from one conveyor onto another.

The Food Grade MCT 300 incorporates a food grade electro less nickel enclosure and either a kel F polymeric, or sapphire viewing window. An optional water/air cooling panel or vortec cooler are available if the ambient temperature exceeds 55°C.

Measurement Performance

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

