Fast Analysis of High Moisture Content

From ketchup to moisturizing cream to paint, the moisture content of materials is a decisive factor in determining product quality - especially in substances with an extremely high moisture content.
The new LMA200PM moisture analyzer from Sartorius sets the standards for this very requirement. Within just 40 to 120 seconds the LMA200PM delivers precise results on the moisture content of the substance tested. The LMA200PM uses the loss-on-drying technique and heats the sample with microwave radiation, which has been proved to be the fastest and most effective drying method, particularly for materials that contain a high proportion of water. At the same time, the LMA200PM's integrated analytical weighing system with a resolution of 0.1 mg ensures unbeatable precision for determining wet and dry weights of the sample, which form the basis for calculation of loss on drying.

To achieve fast measurement times, the sample must absorb a great deal of microwave radiation in a very short time and convert it to thermal energy. This is why the LMA200PM bombards the sample with microwave radiation from two fields located on the floor of the cylindrical sample chamber, directly below the sample. The microwave radiation, in the 2.45 GHz range, is thus focused directly on the sample while the rotation of the sample retainer ensures homogenous distribution of microwave energy in the sample material, eliminating the hot spots and cold spots that can occur with conventional microwave heating units.

Furthermore, the water vapor emitted during drying in the LMA200PM is rapidly conducted away from the sample. This is accomplished by applying the sample material to a glass fiber pad, which allows the water vapor to escape from both the top and the bottom. An exhaust system draws the water vapor out of the sample chamber, thus preventing condensation.

The color touchscreen on the LMA200PM provides excellent readability and easy operation. Just one key is all that's required in routine operation; all other steps are automatic, and plain-language guidance texts support the operator. The results of measurement are locked into the display until the user press a key to start the next analysis.

With the combination of high-resolution weighing technology and faster sample drying, Sartorius has closed a gap in their product portfolio and expanded this range of instruments by the addition of a very fast measuring instrument for at-line production monitoring. Together with their recently introduced microwave resonance technology – an indirect detection method that works in just seconds and is ideal for use on or at the production line – and their well-known moisture analyzer series with infrared dryers as well as a coulometer for selective detection of water in the low ppm range, Sartorius now covers the entire range of typical moisture analysis applications, from incoming inspection to production monitoring to laboratory QA and research and development. At last: single-source moisture analysis technology.

Sartorius Stedim Biotech
www.sartorius.com [1]

Source URL (retrieved on *05/19/2013 - 4:31pm*):
http://www.mdtmag.com/product-releases/2012/03/fast-analysis-high-moisture-content

Links:
[1] http://www.sartorius.com/