

Testing tomato sauce within minutes

LMA200 moisture analyzer successfully in action in Xinjiang, China



Luo Ling, Director of the Quality Control Center at COFCO Xinjiang Tunhe Jimsar (right) and Liu Wei, the Sartorius sales engineer (left)

COFCO Xinjiang Tunhe Co. Ltd based in Urumqi, Xinjiang, China, is one of the largest tomato processing companies in the world. It owns about 333 km² of tomato plantations in Xinjiang and Inner Mongolia, and processes fresh tomatoes in 22 plants. Its annual production capacity comprises processing approximately 500,000 tons of tomato paste into drums and containers, 53,000 tons of canned tomato paste for end users, 3,000 tons of tomato powder and ten tons of lycopene (an antioxidant obtained from tomato pigment). The company's products are exported to over 80 countries and regions including the USA, Europe, the Far East and the Middle East.

As of July 2008, the company has been successfully using the Sartorius moisture analyzer LMA200. Its fast analysis times, combined with exceptionally high accuracy, enables the company to meet increased demands on effective process monitoring. This moisture analyzer performance is on a level with that of Sartorius balances, which COFCO Xinjiang Tunhe, a satisfied Sartorius customer, has purchased over the past several years.

In March 2008, COFCO Xinjiang Tunhe scanned the market to find a quick and reliable method of moisture analysis to improve its working efficiency. The company turned to our regional Sartorius sales engineer, Mr. Liu Wei. Based on COFCO's existing applications and requirements, he recommended the Sartorius LMA200 moisture analyzer. At a meeting, Mr. Liu Wei

highlighted the LMA200's technical performance features and the services Sartorius could provide. To verify the suitability of the LMA200 and to support COFCO's staff in defining optimal operating parameters, the Sartorius application engineer performed many comparative tests for this customer at our application laboratory in Beijing, Sartorius headquarters in China. In the past, COFCO had to spend about four hours to measure moisture using a vacuum drying oven. However, by using the Sartorius LMA200 moisture analyzer, it now takes COFCO less than two minutes to complete moisture analysis of a sample!



A pleased member of COFCO's laboratory staff who are very satisfied with LMA200

The LMA200 operates according to the loss-on-drying method; i.e., the moisture content in a given sample is calculated based on the weight loss that occurs as a sample is dried. The sample is heated by the LMA200 using microwave radiation. This radiation is absorbed by the dipolar molecular components of a sample; i.e., primarily water, and then converted into heat. The advantage of this method is that not the entire sample is directly heated, as is the case in the conventional oven-drying method, but rather its water content. Although the microwave analyzer does marginally heat volatile compounds, such as oils or fats, heating of this volatile portion is significantly reduced in comparison with other drying methods. The values measured using the LMA200 thus closely approximate the actual water content in the sample.

COFCO was especially interested in the data conversion function of the LMA200 that enables comparison of its results to those of the vacuum oven-drying method, where the latter is still the valid Chinese national standard. By comparing the values measured using both the vacuum method and the LMA200, the LMA200 uses its data conversion function to determine a coefficient that lets the analyzer automatically convert its results to those of the vacuum oven-drying method. Therefore, this function enables direct comparison of LMA200 test results with those of other factories or with past results obtained by the vacuum oven-drying method.

As a long-standing customer, COFCO Xinjiang Tunhe holds Sartorius in high esteem, and stated: "We always use Sartorius balances in our daily work. Even though we have just become acquainted with the Sartorius moisture analyzer, we have every reason to place our trust in Sartorius products. Its name truly does stand for high quality and excellent services."

In early July 2008, the first microwave moisture analyzer was set up at the COFCO Xinjiang Tunhe Jimsar tomato processing plant. In the meantime, the instrument has been running "at full speed" and is appreciated by all users and the board of management. COFCO is very satisfied with the way in which the LMA200 has improved the company's efficiency and, meanwhile, the analyzer has proved its efficacy in COFCO's quality control and monitoring.

Reader Service Code: 326



LMA200 – speed meets analytical precision

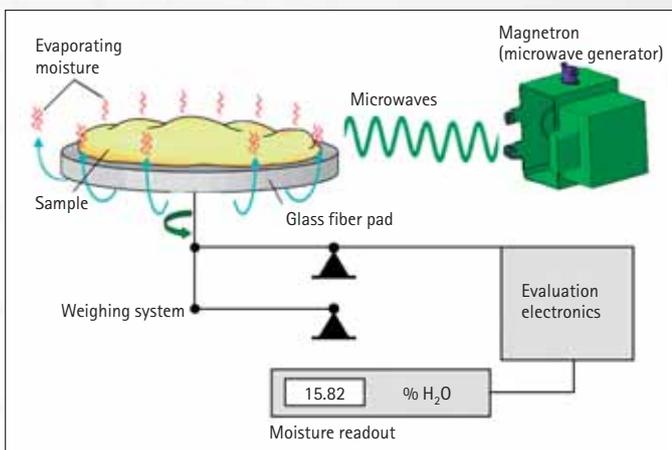


Diagram outlining how the LMA200 works: weighing system, sample holder and magnetron (microwave generator) for heating samples