SHIMADZU
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Application News

No.EG-11

Particle Size Measurements

Measuring of Food Products

SALD-2201 and DS-5

Alternative instruments and accessories leading to similar results:

- SALD-2201 with DS-21
- SALD-2300 with DS-5
- SALD-3101 with DS-5/DS-21

Background

Physical properties of food play a key role in all fields where modern technological processes are applied for the generation of food raw materials and the production of food. The determination of physical properties of food and related products are a pre-requisite for planning, production engineering and automation processes in today's food, pharmaceutical and cosmetics industries as well as in all related quality control activities.

Measurement

For the measurement Shimadzu´s dry measurement unit DS-5 was used. To perform a measurement the cylindrical sample cell was filled with the onion powder up to a height of 1cm.

During the measurement the sample cell rotates around its own axis and pressurized air (4bar) disperses the sample within the sample cell. Simultaneously the sample is sucked out of the cell through a needle passing the measuring chamber of the particle size instrument.

To increase the efficiency of the dispersion process Shimadzu´s dry measurement unit uses TWO dispersion systems to disperse the sample. A good dispersion is essential to measure single particles and not agglomerates.

To show the reproducibly of the measurement the same sample cup was filled and measured three times.

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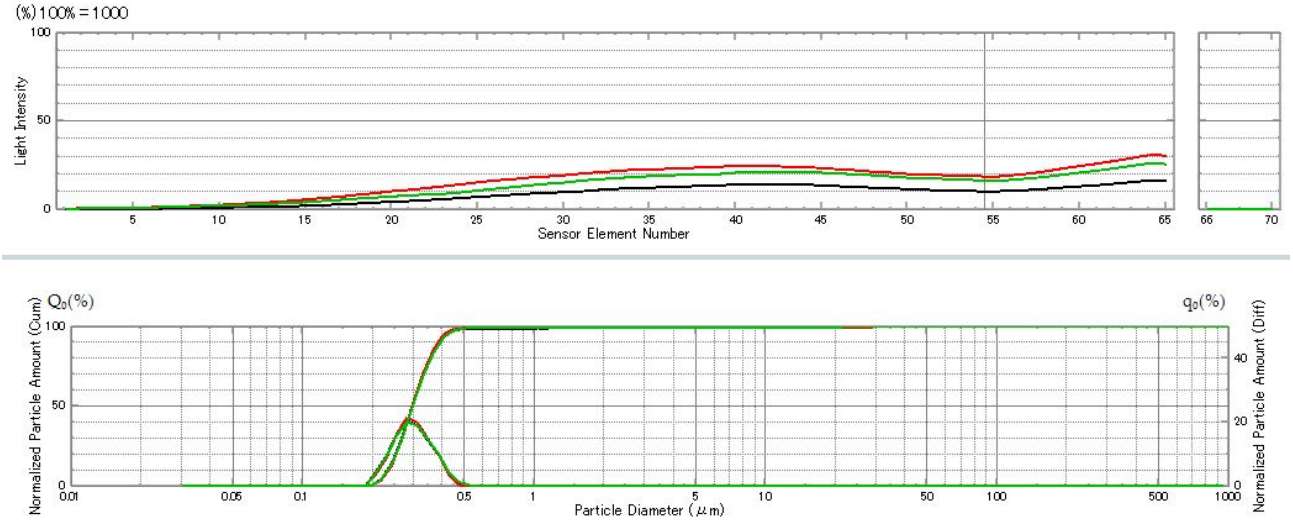
Results



Upper graph shows the light intensity spread over the single detector elements. The lower graph shows the particle size distribution with a peak at 0.4µm.