

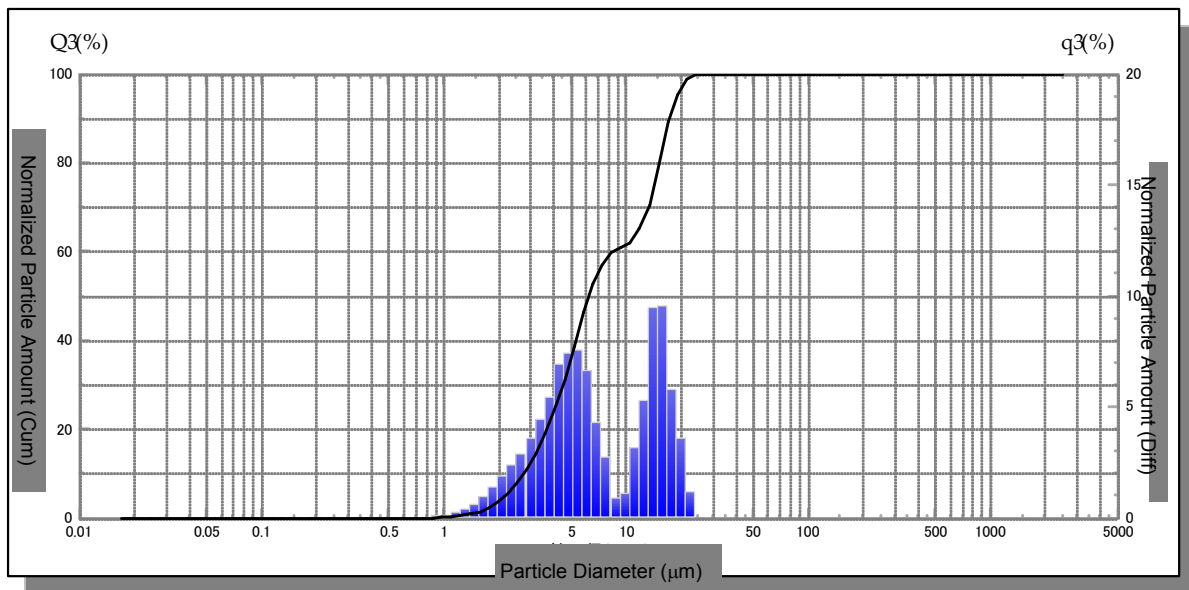
## Laser Diffraction Particle Size Analyzer

### SALD-2300 Application Topic #2

#### Quantitative Evaluation of Flavor by Detecting Trace Particulates in Red Wine

The trace particulates in red wine, shochu (Japanese liquor similar to vodka), green tea, and other beverages can influence delicate human senses and, in a broader sense, our sense of taste and flavor. Consequently, these trace particles can affect the color, tongue feel, throat feel, tooth feel, and other characteristics of beverages in a subtle way. Furthermore, because the particulates are present in such trace quantities, attempting to evaluate beverage flavor or control its quality was dependent on the senses, experience, and intuition of expert artisans.

However, because the SALD-2300 offers ten times higher sensitivity than previous models, it can measure concentrations as low as 0.1 ppm. Consequently, it can be used to perform such flavor evaluations objectively and quantitatively. It also helps solve the problem of accounting for individual differences and how to transfer expertise to successors.



Particle Size Analysis Results from Trace Particulates in Red Wine

Particulate size distributions are slightly smaller than the smallest size humans can generally recognize as individual particles, which is about 20  $\mu\text{m}$ . This is thought to be the ideal size for choreographing our sense of flavor. A SALD-2300 analyzer allows supplementing ambiguous expressions of flavor with quantitative information for more objective and efficient product development and quality control.

Note: This is possible due to 10 times higher sensitivity than previous models and 100 times higher sensitivity than typical analyzers.

#### SALD-2300 Small-Volume Measurement System



SALD-2300 Measurement Unit



SALD-BC23 Batch Cell

## SALD-2300 Small-Volume Measurement System (SALD-2300 + SALD-BC23)

With 10 times higher sensitivity than previous Shimadzu models and 100 times higher sensitivity than typical analyzers, the SALD-2300 is able to measure trace particulates in red wine using only a small sample quantity (12 mL). In addition, samples do not need to be concentrated or otherwise pretreated. Red wine can be measured by simply placing it in the cell. Furthermore, the use of small quantities minimizes waste of expensive wine.

### SALD-2300 Small-Volume Measurement System Features

- Allows measuring small 12 mL volumes.

Especially useful for expensive samples or samples with limited availability.

- Measurement range: 17 nm to several hundred  $\mu\text{m}$
- Applicable concentration range: 0.1 ppm to 100 ppm
- Can be used with organic solvents or acids.

Due to the small quantities involved, disposing of suspensions containing organic solvents or acids is easy.

- The vertical motion of the stirring plate inhibits particle settling. In addition, the stirring plate speed is controllable via the computer.
- A tetrafluoroethylene resin funnel is included to prevent spilling suspensions, reducing the chance of getting it on hands or fingers and preventing the contamination of the cell surface.

