



PARTICLES IN WAX MEASURED ON THE PARTICA LA-960S

Summary

Certain types of materials are encapsulated in wax (or other intermediate material) for a final product use or as an intermediate stage in a manufacturing process. Examples include pigments, fillers in polymers, or in this example, catalyst in wax. If the size of the encapsulated particles is of primary interest, the analysis method must find a way to remove the intermediate phase to suspend the primary particles. Most commonly, a suitable solvent that dissolves the intermediate, but not the primary particles is used. In some cases, an increased temperature can be used to melt this phase.

Analytical test method

RI (particle):

Dispersant fluid: Toluene at 50 degrees C

Sonication: None

Circulation speed: 3

Agitation speed: 3, continuous

Notes: A high concentration of the wax/catalyst sample was dissolved (melted) on a hot plate-stirrer. When the flow system of the instrument was up to the set temperature, enough of the sample was added to reach the optimum light transmittance.

Example data

Median Diameter (μm)				
SAMPLE ID	RUN #1	RUN #2	RUN #3	AVERAGE
SampleTB	19.49	18.61	18.33	18.81
SampleTC	21.23	20.96	21.13	21.11

Discussion: Care must be taken to ensure that the intermediate phase is completely dissolved or molten, otherwise large particle will be reported. The temperature control circulation system for the LA-960 allows even samples requiring a high temperature to be measured. The solvent resistance allows almost any organic solvent, providing the user with a wide range of options in selecting the most appropriate solvent.