

PARTICLE CHARACTERIZATION LABORATORY

SAMPLE PREPARATION PROCEDURE

The samples were characterized utilizing the LS 13 320 Aqueous Liquid Module (ALM). The sample was rehydrated following the procedure of TP-00143 Appendix C. After mixing well, an aliquot of the sample was added to the ALM sample vessel and analyzed for 60 sec. The particle size distribution was determined using the Fraunhofer optical model.

SUMMARY OF PARTICLE SIZE ANALYSIS

| Sample Information: xxxxxxxxxxxxxxxxxxxx | | | | | | | |
|--|--------|-----------|------------|---------|---------|---------|---------|
| IST No. S-ISTXXXX: xxxx | | | | | | | |
| Lot No.: Sample 2 | | | | | | | |
| Volume statistics | | | | | | | |
| Median Size (µm) | < 1 µm | < 5 µm | < 10 µm | < 20 µm | < 30 µm | < 40 µm | < 50 µm |
| 1.888 | 27.3 % | 84.2 % | 94.6 % | 99.7 % | 100 % | 100 % | 100 % |
| | > 1 µm | > 5 µm | > 10 µm | > 20 µm | > 30 µm | > 40 µm | > 50 µm |
| | 72.7 % | 15.8 % | 5.43 % | 0.31 % | 0 % | 0 % | 0 % |
| Number statistics | | | | | | | |
| Median Size (µm) | < 1 µm | < 5 µm | < 10 µm | < 20 µm | < 30 µm | < 40 µm | < 50 µm |
| 0.083 | 99.9 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % |
| | > 1 µm | > 5 µm | > 10 µm | > 20 µm | > 30 µm | > 40 µm | > 50 µm |
| | 0.11 % | 0.00040 % | 0.000015 % | 0 % | 0 % | 0 % | 0 % |

LS™ 13 320 LASER DIFFRACTION PARTICLE SIZE ANALYZER



The LS 13 320 Laser Diffraction Particle Size Analyzer uses laser diffraction and the patented polarization intensity differential scattering (PIDS) technology to rapidly determine the particle size distribution of materials with an overall sizing range of 0.04 µm to 2000 µm in a single scan with no extrapolation. This is accomplished with high resolution and excellent reproducibility.

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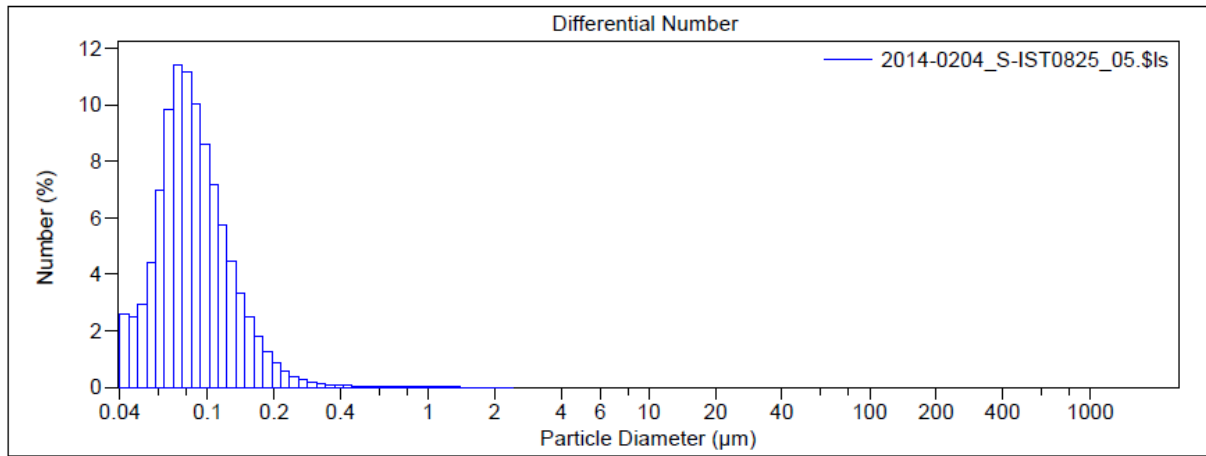
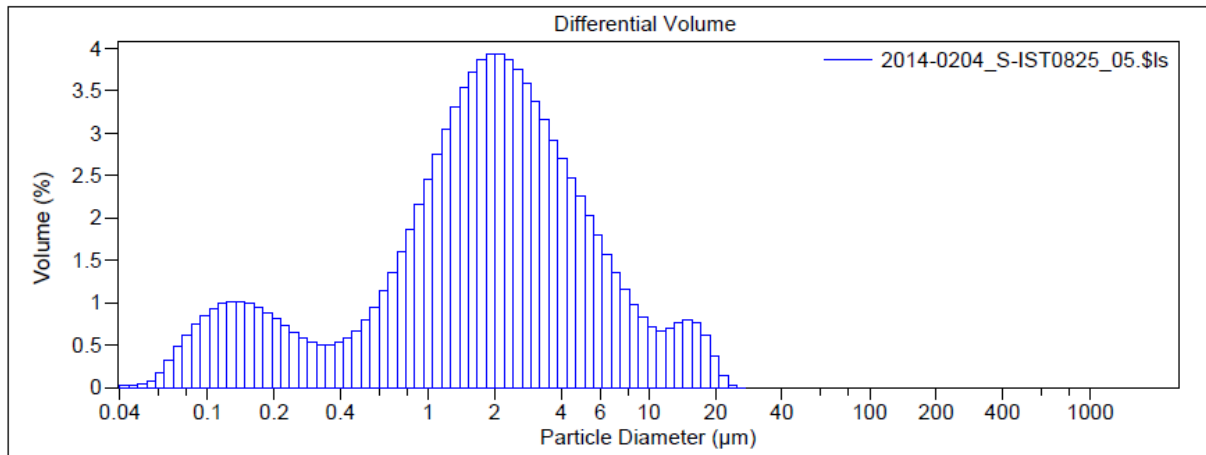


LS Particle Size Analyzer

10:09

Lot No. Sample 2

| | |
|---------------------|--|
| File name: | C:\LS13320\Data Backup\Samples\2014-0204_S-IST0825_05.\$ls |
| File ID: | |
| IST Sample No.: | S-IST0825 |
| Sample Description: | |
| Optical model: | Fraunhofer.rf780d PIDS included |
| Start time: | 13:40 4 Feb 2014 |



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LS Particle Size Analyzer

10:09

Sample 2

| | | | | | | |
|---------------------------------------|----------|-----------------------------|--------|----------|--------|--------|
| Volume Statistics (Arithmetic) | | 2014-0204_S-IST0825_05.\$Is | | | | |
| Calculations from 0.040 µm to 2000 µm | | | | | | |
| Volume: | 100% | | S.D.: | 3.481 µm | | |
| Mean: | 2.976 µm | | | | | |
| Median: | 1.888 µm | | | | | |
| <1 µm | <5 µm | <10 µm | <20 µm | <30 µm | <40 µm | <50 µm |
| 27.3% | 84.2% | 94.6% | 99.7% | 100% | 100% | 100% |
| >1 µm | >5 µm | >10 µm | >20 µm | >30 µm | >40 µm | >50 µm |
| 72.7% | 15.8% | 5.43% | 0.31% | 0% | 0% | 0% |

| | | | | | | |
|---------------------------------------|----------|-----------------------------|--------|----------|--------|--------|
| Number Statistics (Arithmetic) | | 2014-0204_S-IST0825_05.\$Is | | | | |
| Calculations from 0.040 µm to 2000 µm | | | | | | |
| Number: | 100% | | S.D.: | 0.073 µm | | |
| Mean: | 0.096 µm | | | | | |
| Median: | 0.083 µm | | | | | |
| <1 µm | <5 µm | <10 µm | <20 µm | <30 µm | <40 µm | <50 µm |
| 99.9% | 100% | 100% | 100% | 100% | 100% | 100% |
| >1 µm | >5 µm | >10 µm | >20 µm | >30 µm | >40 µm | >50 µm |
| 0.11% | 0.00040% | 0.000015% | 0% | 0% | 0% | 0% |