

nanoYo PTE LTD
Director
Mr. Masayuki Takamatsu

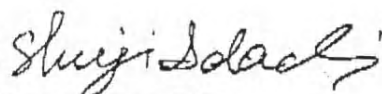
May 24, 2007

Report on particle size of samples

The particle-size distributions of the samples 1 & 2 which had been provided by nanoYo PTE Ltd. were analyzed using a dynamic light scattering spectrophotometer (Otsuka Electronics, Osaka, Japan). Prior to the analysis, the viscosity and refractive index of the solvent were determined at 25°C to be 1.222 cP and 1.3367, respectively.

Figure 1 shows the particle-size distribution of sample 1. Closed diamond and solid curve represent the frequent and cumulative distributions, which were calculated on a weight basis. There were a major peak and two minor peaks in the frequent distribution. The mean diameter of the particles at the major peak was 3.3 ± 0.3 nm, as shown in Table 1. Because the sample contains the particles, the mean diameter of which was 157.9 nm, although the content was very low, it looked slightly milky.

Figure 2 shows the particle-size distribution of sample 2. The keys are the same as in Fig. 1. The mean particle diameter was $2.4 \text{ nm} \pm 0.4 \text{ nm}$ (SD). After the sample was stood for 1.5 h at 25°C, the analysis was made again. The frequent and cumulative distributions are also shown in Fig. 2 by open diamonds and dotted curve, respectively. The particle grew to form flocs during the storage (mean diameter \pm SD : 17.0 ± 3.7 nm). Because flocs are aggregates by very weak attractive force, they could be re-dispersed to smaller particles.



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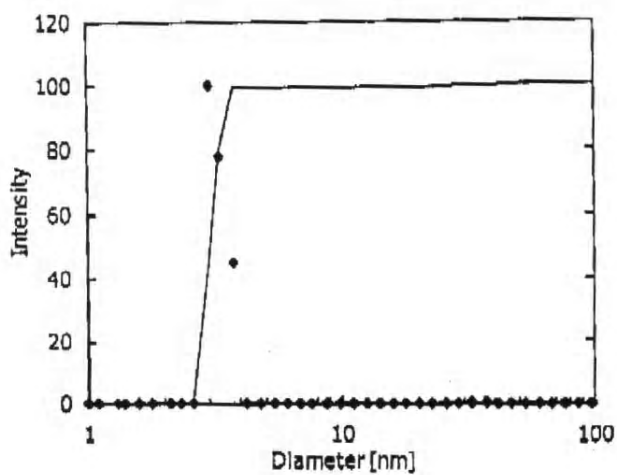


Table 1. Particle-size of sample 1

Peak No.	Mean diameter [nm]	SD [nm]
1	3.3	0.3
2	11.2	2.3
3	157.9	26.1

Fig. 1. Frequent and cumulative distributions of particle size in sample 1.

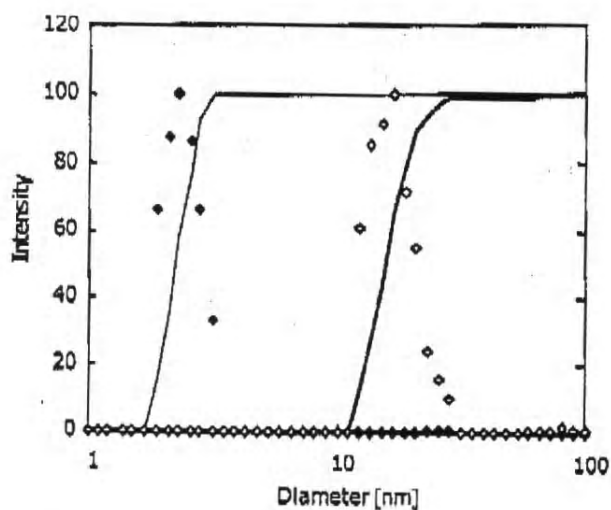


Table 2. Particle-size of sample 2

Measurement	Peak No.	Mean diameter [nm]	SD [nm]
1st	1	2.4	0.4
	2	31.2	10.6
2nd	1	17	3.7
	2	79.7	12.6

Fig. 2. Frequent and cumulative distributions of particle size in sample 2. The distributions were measured twice under the same conditions after 1.5-h interval.