

## **Colloidal silica (bimodal) - Morphological properties**

Art. ID	ERM-FD102
Unit	ampoule
Deliverydetails	No Dangerous Good /not restricted

### **Description**

ERM-FD102 consists of a mixture of two monomodal populations of silica nanoparticles suspended in an aqueous solution. The two monomodal particle populations, which have distinct nominal particle sizes of 20 nm and 80 nm, are referred to as size class A and size class B, respectively. The material is available in 10 mL pre-scored glass ampoules containing approximately 9 mL of suspension.

Text/Information	Analyte/Parameter	CAS number	Concentration/Value	Unit	Method	Source
Certified value - Size class A	Arithmetic mean diameter r by DLS		17,8 ± 1,5	nm		
Certified value - Size class B	Arithmetic mean diameter r by DLS		88,5 ± 2,2	nm		
Certified value - Size class A	Median diameter by SEM/ TEM		18,3 ± 1,7	nm		
Certified value - Size class B	Median diameter by SEM/ TEM		83,3 ± 2,3	nm		
Certified value - Size class A	Modal diameter by CLS		23,9 ± 2,0	nm		
Certified value - Size class B	Modal diameter by CLS		88 ± 7	nm		
Certified value - Size class A	Modal diameter by SEM/T EM		18,2 ± 1,6	nm		
Certified value - Size class B	Modal diameter by SEM/T EM		84,0 ± 2,1	nm		
Certified value	Effective particle density		2,0 ± 0,1	g/cm <sup>3</sup>		
Indicative value - Size class A	Harmonic mean diameter by DLS		17 ± 4	nm		
Indicative value - Size class B	Harmonic mean diameter by DLS		84,8 ± 2,2	nm		
Indicative value - Size class A	Modal diameter by DLS		17,1 ± 2,4	nm		
Indicative value - Size class B	Modal diameter by DLS		84 ± 9	nm		
Indicative value - Size	Modal height by AFM		16,9 ± 1,8	nm		

class A			
Indicative value - Size	Modal height by AFM	$80 \pm 6$	nm
class B			
Indicative value - Size	Mass weighted modal di	$18,0 \pm 2,7$	nm
class A	ameter by		
Indicative value - Size	Mass weighted modal di	$88 \pm 7$	nm
class B	ameter by		
Indicative value - Size	Modal diameter by PTA	$78 \pm 5$	nm
class B			
Indicative value - Size	Mean diameter by PTA	$82 \pm 4$	nm
class B			
Indicative value - Size	Median diameter by PTA	$79,2 \pm 2,2$	nm
class B			