

*The German  
spirit of quality  
since 1854*



**SiLibeads**<sup>®</sup> ... mixing drugs  
... non-refillable bottles  
... better grinding  
... crystal clear water  
... reflecting roads  
... better surfaces  
... high precision



# SiLibeads®

## Technical Glass Beads

Type P – Borosilicate	Chemical composition (main components)		Chemical/Technical data		Some of the mainly used standard sizes						
	SiO <sub>2</sub>	81,00 %	Hydrolytic class HGB 1	DIN ISO 719	Diameter *)	Tolerance **)	Roundness **)	Stand. Surface	Weight/1000 pcs	Pieces / 1000 gr	
	B <sub>2</sub> O <sub>3</sub>	13,00 %	Acidic class S 1	DIN 12116	2,000 mm	+/- 0,02 mm	≤ 0,02 mm	polished	9,34 gr.	107.055	
	Na <sub>2</sub> O	} 4,00 %	Alcaline class A 2	DIN ISO 695	2,500 mm	+/- 0,02 mm	≤ 0,02 mm	polished	18,24 gr.	54.812	
	K <sub>2</sub> O		Specific weight 2,23 kg/l	DIN EN ISO 787-10	3,969 mm	5/32"	+/- 0,02 mm	≤ 0,02 mm	polished	73,00 gr.	13.698
	Al <sub>2</sub> O <sub>3</sub>	2,00 %			4,762 mm	3/16"	+/- 0,02 mm	≤ 0,02 mm	polished	126,09 gr.	7.931
	others				6,350 mm	1/4"	+/- 0,02 mm	≤ 0,02 mm	polished	298,97 gr.	3.345
					7,938 mm	5/16"	+/- 0,02 mm	≤ 0,02 mm	polished	584,03 gr.	1.712
					12,700 mm	1/2"	+/- 0,02 mm	≤ 0,02 mm	matt	2.391,75 gr.	418
					19,050 mm	3/4"	+/- 0,02 mm	≤ 0,02 mm	matt	8.072,15 gr.	124
				31,750 mm	1 1/4"	+/- 0,02 mm	≤ 0,02 mm	matt	37.371,08 gr.	27	
				*) special sizes available upon request, up to 55,0 mm Ø		**) special tolerance +/- 0,01 mm and roundness (sphericity) ≤ 0,01 mm possible					

Type P – Soda Lime	Chemical composition (main components)		Chemical/Technical data		Some of the mainly used sizes						
	SiO <sub>2</sub>	70,00 %	Hydrolytic class HGB 1	DIN ISO 719	Diameter *)	Tolerance **)	Roundness **)	Stand. Surface	Weight/1000 pcs	Pieces / 1000 gr	
	K <sub>2</sub> O	5,65 %	Acidic class S 1	DIN 12116	2,381 mm	3/32"	+/- 0,02 mm	≤ 0,02 mm	polished	17,67 gr.	56.596
	Na <sub>2</sub> O	9,48 %	Alcaline class A 1	DIN ISO 695	3,175 mm	1/8"	+/- 0,02 mm	≤ 0,02 mm	polished	41,90 gr.	23.869
	CaO	5,83 %	Specific weight 2,58 kg/l	DIN EN ISO 787-10	5,556 mm	7/32"	+/- 0,02 mm	≤ 0,02 mm	polished	224,51 gr.	4.454
	BaO	3,15 %			7,144 mm	9/32"	+/- 0,02 mm	≤ 0,02 mm	polished	477,27 gr.	2.095
	others				9,525 mm	3/8"	+/- 0,02 mm	≤ 0,02 mm	matt	1.131,19 gr.	884
					13,494 mm	17/32"	+/- 0,02 mm	≤ 0,02 mm	matt	3.216,34 gr.	311
					15,081 mm	19/32"	+/- 0,02 mm	≤ 0,02 mm	matt	4.489,83 gr.	223
					15,875 mm	5/8"	+/- 0,02 mm	≤ 0,02 mm	matt	5.236,98 gr.	191
				25,400 mm	1"	+/- 0,02 mm	≤ 0,02 mm	matt	21.450,67 gr.	47	
				*) special sizes available upon request, up to 55,0 mm Ø		**) special tolerance +/- 0,01 mm and roundness (sphericity) ≤ 0,01 mm possible					

Type S	Chemical composition (main components)		Chemical/Technical data		Available Standard Sizes							
	SiO <sub>2</sub>	72,50 %	Hydrolytic class HGB 1	DIN ISO 719	Art. No	Size Range (mm)*	Bulk Density (kg/l)	Pieces/1000 gr	Art. No	Size Range (mm)*	Bulk Density (kg/l)	Pieces/1000 gr
	Na <sub>2</sub> O	13,00 %	Acidic class S 3	DIN 12116	4501	0,25 - 0,50	1,46	14.486.600	4507	1,70 - 2,10	1,52	111.370
	CaO	9,06 %	Alcaline class A 1	DIN ISO 695	45015	0,40 - 0,60	1,47	6.111.500	4508	2,00 - 2,40	1,53	71.740
	MgO	4,22 %	Specific weight 2,50 kg/l	DIN EN ISO 787-10	4502	0,50 - 0,75	1,49	3.129.100	4510	2,40 - 2,90	1,53	41.050
	Al <sub>2</sub> O <sub>3</sub>	0,58 %			4503	0,75 - 1,00	1,50	1.140.300	4511	2,85 - 3,45	1,53	24.440
	others				4504	1,00 - 1,30	1,51	502.300	4512	3,40 - 4,00	1,53	15.080
					4505	1,25 - 1,65	1,51	250.580	4513	3,80 - 4,40	1,53	11.080
					4506	1,55 - 1,85	1,52	155.490				
					*) 0 - 400 µm microbeads available in different tolerances							

Type SL	Chemical composition (main components)		Chemical/Technical data		Available Standard Sizes							
	SiO <sub>2</sub>	53,50 %	Hydrolytic class HGB 1	DIN ISO 719	Art. No	Size Range (mm)	Bulk Density (kg/l)	Pieces/1000 gr	Art. No	Size Range (mm)	Bulk Density (kg/l)	Pieces/1000 gr
	CaO	20,10 %	Acidic class S 4	DIN 12116	7502	0,50 - 0,75	1,55	3.020.370	7508	2,00 - 2,50	1,53	64.730
	Al <sub>2</sub> O <sub>3</sub>	14,80 %	Alcaline class A 1	DIN ISO 695	7503	0,75 - 1,00	1,54	1.100.710	7510	2,50 - 3,00	1,53	35.450
	B <sub>2</sub> O <sub>3</sub>	8,11 %	Specific weight 2,59 kg/l	DIN EN ISO 787-10	7504	1,00 - 1,40	1,53	426.730	7511	2,80 - 3,40	1,52	24.750
	MgO	2,33 %			7505	1,30 - 1,70	1,53	218.480	7512	3,30 - 3,90	1,51	15.800
	others				7507	1,70 - 2,10	1,53	107.500	7513	3,90 - 4,40	1,50	10.310

Type M	Chemical composition (main components)		Chemical/Technical data		Available Standard Sizes							
	SiO <sub>2</sub>	66,70 %	Hydrolytic class HGB 2	DIN ISO 719	Art.No.	Diameter/Tolerance	Bulk Density (kg/l)	Pieces/1000 gr	Art.No.	Diameter/Tolerance	Bulk Density (kg/l)	Pieces/1000 gr
	Na <sub>2</sub> O	14,00 %	Acidic class S 1	DIN 12116	5002	1,5 mm +/- 0,2 mm	1,50	226.350	5010	4,5 mm +/- 0,3 mm	1,50	8.380
	CaO	7,59 %	Alcaline class A 1	DIN ISO 695	5003	2,0 mm +/- 0,2 mm	1,50	95.490	5011	5,0 mm +/- 0,3 mm	1,50	6.110
	Al <sub>2</sub> O <sub>3</sub>	3,46 %	Specific weight 2,50 kg/l	DIN EN ISO 787-10	5004	2,5 mm +/- 0,2 mm	1,50	48.890	5012	6,0 mm +/- 0,3 mm	1,48	3.530
	B <sub>2</sub> O <sub>3</sub>	2,90 %			5005	3,0 mm +/- 0,3 mm	1,50	28.290	5013	7,0 mm +/- 0,3 mm	1,48	2.220
	others				5006	3,5 mm +/- 0,3 mm	1,50	17.810	5014	8,0 mm +/- 0,4 mm	1,48	1.490
					5009	4,0 mm +/- 0,3 mm	1,50	11.930	5015	9,0 mm +/- 0,4 mm	1,45	1.040

Figures are reference values.

Special sizes are available upon request. Figures of Bulk Density are reference values.

**Type P - Borosilicate**

High Precision Borosilicate Glass Beads

... mixing drugs ... high precision



55-02000-89  
2,000 mm



55-02769-89  
2,769 mm



55-03175-89  
3,175 mm



55-03969-89  
3,969 mm



55-04762-89  
4,762 mm

**Type P - Soda Lime**

High Precision Soda Lime Glass Beads

... high precision



55-01000-01  
1,000 mm



55-02381-01  
2,381 mm



55-02780-01  
2,780 mm



55-03680-01  
3,680 mm



55-03000-B162  
3,000 mm

**Type S**

Thermal Rounded Soda Lime Glass Beads

... better grinding ... crystal clear water ... better surfaces



45015  
0,4 - 0,6 mm



4504  
1,0 - 1,3 mm



4507  
1,7 - 2,1 mm



4510  
2,4 - 2,9 mm



4512  
3,4 - 4,0 mm

**Type SL**

Thermal Rounded Aluminum Borosilicate Glass Beads

... better grinding



7505  
1,3 - 1,7 mm



7507  
1,7 - 2,1 mm



7508  
2,0 - 2,5 mm



7510  
2,5 - 3,0 mm



7512  
3,3 - 3,9 mm

**Type M**

Pressed Soda Lime Glass Beads

... non-refillable bottles ... crystal clear water ... better surfaces



5003  
2,0 mm



5005  
3,0 mm



5009  
4,0 mm



5010  
4,5 mm



5011  
5,0 mm



# SiLibeads®

## Recommendations for applications

Type P - Borosilicate

**mixing balls in the pharmaceutical industry**



**high precision beads for dispensers**



Type P - Soda Lime

**valves of dosage pumps**



**closing valve for ink cartridges**



**high precision beads for ball bearings**



Type S

**beads for water filtration, waterwells**

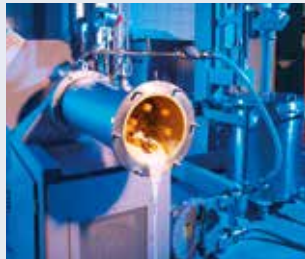


**reflection beads > 0,4 mm for the road marking**



Type SL

**grinding and dispersion media for paints, pigments, agro chemicals etc.**



**for grinding of pH-sensitive suspensions**



Type M

**mixing beads in aerosol sprays**



**impact material for mechanical surface coatings**



**valves for bottle closures**

