



*The German
spirit of quality
since 1854*

SiLibeads® Technical Glass Beads are used wherever precision, durability and chemical resistance are essential.

The SiLibeads® Types P, M, S, and SL combine excellent sphericity, tight tolerances and smooth surfaces of high-quality soda-lime or borosilicate glass for optimal performance in various applications.

SiLibeads®
... better surfaces

Application Overview

Tailored solutions for demanding industries



High-Precision Beads for Technical Applications

SiLibeads® high-precision glass beads deliver exceptional roundness and dimensional accuracy for demanding sectors.

Chemically inert and corrosion-resistant, they perform reliably as spacers, valve beads, and metering components in chemical, medical, optical and aerospace applications.



Efficient Glass Beads for Drinking Water Extraction

SiLibeads® glass beads replace conventional gravel, improving water flow and reducing clogging in wells.

Durable and chemically inert, they support long-lasting water quality, minimize maintenance and help maintain a biofilm-free environment for safe drinking water.



High-Performance Beads for Grinding & Dispersion

Glass and ceramic beads support efficient particle reduction and dispersion in wet grinding.

Durable and chemically resistant, they manage both sensitive and harsh materials with accuracy. Suitable for paints, coatings, inks, chemicals and pharmaceuticals, delivering consistent results.



Reliable Beads for Safe Food Closures

Glass beads ensure smooth operation and tamper resistance in non-refillable food and beverage closures.

Highly durable and carefully inspected for quality, they prevent sticking even with sugary spirits and support product integrity while meeting strict food-industry standards.



Precise-Mixing Beads for Smooth Aerosol Sprays

SiLibeads® glass beads ensure uniform mixing in aerosol cans, keeping liquids evenly blended for consistent performance.

Chemically inert and durable, they prevent contamination and resist corrosion, ideal for cosmetics, pharmaceuticals and industrial aerosols.



Reflective Beads for Safer Road Markings

For over 40 years, SiLibeads® glass beads have enhanced road-marking visibility and safety. Reflecting headlights, they guide drivers clearly—even at night or in wet conditions.

Durable and easy to use, SiLibeads® are perfect for roads, runways, parking areas and industrial zones.

Customised solutions for every industry

We provide solutions tailored to your specific requirements. Discover the benefits of our products across a wide range of applications. Arrange a free consultation with our SiLi team:

+49 9277 9940 or **silibeads@sili.eu**.

Technical Glass Beads

Applications of precision glass beads made of borosilicate glass

- for mixing pharmaceutical substances and formulations
- for sealing in ink cartridges and dispensers (food & cosmetics)
- for chemically resistant ball bearings
- for optical and medical technology
- for reliable performance in aggressive or corrosive media



Ø = 2.5 mm

Type P
Borosilicate

Applications of precision glass beads made of soda lime glass

- for polishing and surface treatment with high roundness
- for high-precision ball bearings in less aggressive environments
- for use as closing elements in dosage pumps and ink cartridges
- for direct food contact applications
- for custom sizes and finishes in industrial use



Ø = 2.7 mm

Type P
Soda Lime

Applications of polished glass beads made of soda-lime glass

- for wet grinding and dispersing of dyes, pigments, agrochemicals and fillers
- for reflective road markings (reflex glass beads > 0.8 mm)
- for blasting and polishing of surfaces, including optical and intraocular lenses
- for clean, precise and customised technical applications
- for bead beating, micro-organism lysis and water applications



Ø = 2.4 - 2.9 mm

Type S

Applications of aluminium borosilicate glass beads

- for energy-efficient fine grinding in agitator bead mills
- for sensitive products requiring high surface cleanliness and chemical stability
- for wet milling processes with minimal alkali leaching
- for grinding and dispersion of paints, pigments and agrochemicals
- for grinding of pH-sensitive suspensions



Ø = 0.5 - 0.8 mm

Type SL

Applications of soda-lime glass beads

- for mixing in aerosol sprays (stirring beads)
- for preventing contamination in bottles with high-value liquids (valve beads)
- for mechanical coating of small metal parts
- for wet milling of pigments, agrochemicals, pharmaceuticals and cosmetics
- for use as support material and filter pack in water wells
- for bead beating and micro-organism lysis in laboratory applications



Ø = 5.0 mm

Type M



Learn more about Technical Glass Beads here: www.sili.eu/en/products/products/silibeads-glass-beads-overview

Technical Glass Beads

Type P Borosilicate



Ø = 2.5 mm

Chemical composition (main components)

SiO ₂	80 %
B ₂ O ₃	13 %
Na ₂ O	4%
K ₂ O	
Al ₂ O ₃	2.5 %
others	-

Chemical/Technical data

Hydrolytic class	HGA1	DIN ISO 720
Acidic class	S1	DIN 12116
Alkaline class	A2	DIN ISO 695
Specific weight	2.23 kg/l	DIN EN ISO 787-10
Grades & Tolerances ANSI/AFBMA - 10.1989		
Grade	Deviation from spherical form in micron	Max. surface roughness in micron
200	5	0.2
100	2.5	0.125

Some of the mainly used standard sizes

Diameter* [mm]	Tolerance** [mm]	Roundness** [mm]	Stand. Surface	Weight/1000 pcs [g]	Pieces/1000 g	
2.000	-	+/- 0.02	≤ 0.02	polished	9.34	107,055
2.500	-	+/- 0.02	≤ 0.02	polished	18.24	54,812
3.969	5/32"	+/- 0.02	≤ 0.02	polished	73.00	13,698
4.762	3/16"	+/- 0.02	≤ 0.02	polished	126.09	7,931
6.350	1/4"	+/- 0.02	≤ 0.02	polished	298.97	3,345
7.938	5/16"	+/- 0.02	≤ 0.02	polished	584.03	1,712
12.700	1/2"	+/- 0.02	≤ 0.02	(fine-)matt	2,391.75	418
19.050	3/4"	+/- 0.02	≤ 0.02	(fine-)matt	8,072.15	124
31.750	1 1/4"	+/- 0.02	≤ 0.02	(fine-)matt	37,371.08	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



Ø = 2.7 mm

Chemical composition (main components)

SiO ₂	71 %
K ₂ O	6 %
Na ₂ O	10 %
CaO	6 %
BaO	5 %
others	-

Chemical/Technical data

Hydrolytic class	HGA2	DIN ISO 720
Acidic class	S2	DIN 12116
Alkaline class	A2	DIN ISO 695
Specific weight	2.58 kg/l	DIN EN ISO 787-10
Grades & Tolerances ANSI/AFBMA - 10.1989		
Grade	Deviation from spherical form in micron	Max. surface roughness in micron
200	5	0.2
100	2.5	0.125

Some of the mainly used sizes

Diameter* [mm]	Tolerance** [mm]	Roundness** [mm]	Stand. Surface	Weight/1000 pcs [g]	Pieces/1000 g	
2.381	3/32"	+/- 0.02	≤ 0.02	polished	17.67	56,596
3.175	1/8"	+/- 0.02	≤ 0.02	polished	41.90	23,869
5.556	7/32"	+/- 0.02	≤ 0.02	polished	224.51	4,454
7.114	9/32"	+/- 0.02	≤ 0.02	polished	477.27	2,095
9.525	3/8"	+/- 0.02	≤ 0.02	(fine-)matt	1,131.19	884
13.494	17/32"	+/- 0.02	≤ 0.02	(fine-)matt	3,216.34	311
15.081	19/32"	+/- 0.02	≤ 0.02	(fine-)matt	4,489.83	223
15.875	5/8"	+/- 0.02	≤ 0.02	(fine-)matt	5,236.98	191
25.400	1"	+/- 0.02	≤ 0.02	(fine-)matt	21,450.67	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



Ø = 2.4 - 2.9 mm

Chemical composition (main components)

SiO ₂	72 %
Na ₂ O	14 %
CaO	9 %
MgO	4 %
others	-

Chemical/Technical data

Hydrolytic class	HGA2	DIN ISO 720
Acidic class	S3	DIN 12116
Alkaline class	A1	DIN ISO 695
Specific weight	2.50 kg/l	DIN EN ISO 787-10

Available standard sizes

Article	Size Range* [mm]	Bulk Density [kg/l]	Pieces/1000 g	Article	Size Range* [mm]	Bulk Density [kg/l]	Pieces/1000 g
4501	0.25-0.50	1.46	14,486,600	4507	1.70-2.10	1.52	111,370
45015	0.40-0.60	1.47	6,111,500	4508	2.00-2.40	1.53	71,710
4502	0.50-0.75	1.49	3,129,100	4510	2.40-2.90	1.53	41,050
4503	0.75-1.00	1.50	1,140,300	4511	2.85-3.45	1.53	24,440
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



Ø = 0.5 - 0.8 mm

Chemical composition (main components)

SiO ₂	55 %
CaO	20 %
Al ₂ O ₃	14 %
B ₂ O ₃	6 %
MgO	4 %
others	-

Chemical/Technical data

Hydrolytic class	HGA2	DIN ISO 720
Acidic class	S4	DIN 12116
Alkaline class	A2	DIN ISO 695
Specific weight	2.59 kg/l	DIN EN ISO 787-10

Available standard sizes

Article	Size Range* [mm]	Bulk Density [kg/l]	Pieces/1000 g	Article	Size Range* [mm]	Bulk Density [kg/l]	Pieces/1000 g
7502	0.50-0.80	1.55	3,020,370	7508	2.00-2.60	1.53	64,730
7503	0.75-1.00	1.54	1,100,710	7510	2.50-3.00	1.53	35,450
7504	1.00-1.40	1.53	426,730	7511	2.90-3.50	1.52	24,750
7505	1.30-1.70	1.53	218,480	7512	3.30-3.90	1.51	15,800
7507	1.70-2.10	1.53	107,500	7513	3.90-4.40	1.50	10,310

Type M



Ø = 5.0 mm

Chemical composition (main components)

SiO ₂	75 %
Na ₂ O	15 %
CaO	5 %
Al ₂ O ₃	2 %
MgO	2 %
others	-

Chemical/Technical data

Hydrolytic class	HGA2	DIN ISO 720
Acidic class	S3	DIN 12116
Alkaline class	A2	DIN ISO 695
Specific weight	2.50 kg/l	DIN EN ISO 787-10

Available standard sizes

Article	Diameter [mm]	Tolerance [mm]	Bulk Density [kg/l]	Pieces/1000 g	Article	Diameter [mm]	Tolerance [mm]	Bulk Density [kg/l]	Pieces/1000 g
5002	1.5	+/-0.2	1.50	226,350	5014	8.0	+/-0.4	1.48	1,490
5003	2.0	+/-0.2	1.50	95,490	5015	9.0	+/-0.4	1.45	1,040
5004	2.5	+/-0.2	1.50	48,890	50151	9.5	+/-0.5	1.45	880
5005	3.0	+/-0.3	1.50	28,290	5016	10.0	+/-0.5	1.45	760
5006	3.5	+/-0.3	1.50	17,810	50165	10.3	+/-0.5	1.45	670
5009	4.0	+/-0.3	1.50	11,930	5017	11.0	+/-0.5	1.45	570
5010	4.5	+/-0.3	1.50	8,380	5018	12.0	+/-0.5	1.45	440
5011	5.0	+/-0.3	1.50	6,110	5021	14.0	+/-0.5	1.43	270
5012	6.0	+/-0.3	1.48	3,530	5023	16.0	+/-0.8	1.43	180
5012	7.0	+/-0.3	1.48	2,220					

