

Product Data Sheet



The German
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SiLibeads Glass beads Type S

First created on: 2017-04-06 Updated on: 2019-03-04
Next inspection on: 2019-12-31 Printed on: 2019-03-04

Version: V5/2019

Product: SiLibeads Glass beads Type S

Material: polished Glass beads made of soda lime glass
Specific weight: 2.50 kg/l
Hydrolytic class: DIN ISO 720 HGB 3
Acidic class: DIN 12116 S 1
Alkaline class: DIN ISO 695 A 1

Application:

- Grinding and dispersing media in horizontal and vertical pearl mills for the wet grinding of paints, pigments, dyestuff, ink, agro-chemicals and minerals.
- Filling material in the chemical-, paper- and synthetic materials industry.
- Filling material for the modification of the physical properties of thermoplast and duroplast.
- Reflection beads for road marking (in diameters > 0.8 mm), specially to improve the visibility at night in case of rain, Type II marking.
- Polishing agent for optical and interocular lenses; diameters between 0.3 - 0.4 mm and 0.4 - 0.6 mm show excellent results.
- Glass beads for shot peening of the surface of metal, plastics, ceramics and wood. and further technical applications

Technical Data:

Roundness: ≥ 0.95 (ratio width/length (x_{\min}/x_{\max}))
Compressive strength: up to 2100 N (belonging to diameter, see table Standard Sizes)
Refractive index: 1.52
Size (Diameter): between 0.25 – 4.40 mm (see table Standard Sizes)
Transformation temperature: 549 °C
Softening point (Littleton point): 734 °C
Melting point: 1446 °C
Specific thermal Conductivity: 1.129 W/(m·K)
Thermal expansion: $9.05 \cdot 10^{-6} \text{ K}^{-1}$ [20 °C] (Coefficient of linear expansion α)
Specific thermal capacity: 1.329 kJ/kg K [>600 °C]
Youngs-Module: 63 GPa
Hardness according to Mohs: ≥ 6
Surface: polished (uncoated);
surface-coating with silane/siloxane is possible on request

Assessment acc. to Food Legislation:

The Glass beads are a consumer good in the sense of §2 clause 6 no. 1 German Code for Food Stuff (LFGB), Commodities and Feeding Stuff. Therefore they have to comply with the legal requirements.

The Glass beads comply with the requirements § 31 of the German Food and Feed Code (LFGB) and of the European Food Regulation 1935/2004/EC, Article 3.

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Chemical Analysis; Glass beads made of soda lime glass; CAS-Nr. 65997-17-3 / EINECS 266-046-0:

Name	Method	Weight	CAS-No.	EINECS
Silicon dioxide SiO ₂	DIN 51001	72.30 %	7631-86-9	231-545-4
Sodium oxide Na ₂ O	DIN 51001	13.30 %	1313-59-3	215-208-9
Calcium oxide CaO	DIN 51001	8.90 %	1305-78-8	215-138-9
Magnesium oxide MgO	DIN 51001	4.00 %	1309-48-4	215-171-9
further		1.50 %		

The heavy metal content of the Glass beads keeps the permitted limits of EU directive 2011/65/EC (RoHS).

Lead < 1000 ppm Cadmium < 100 ppm Chrome VI < 1000 ppm Mercury < 1000 ppm

Standard Sizes – special diameters available by request:

Article	Diameter	Resistance to compression *)	Bulk density	Amount (pcs. per kg)
4501	0.25 – 0.50 mm	-----	1.46 kg/l	14,486,600
45015	0.40 – 0.60 mm	-----	1.47 kg/l	6,111,500
4502	0.50 – 0.75 mm	-----	1.49 kg/l	3,129,100
4503	0.75 – 1.00 mm	-----	1.50 kg/l	1,140,300
4504	1.00 – 1.30 mm	250 – 350 N	1.51 kg/l	502,300
4505	1.25 – 1.65 mm	350 – 500 N	1.51 kg/l	250,580
4506	1.55 – 1.85 mm	500 – 650 N	1.52 kg/l	155,490
4507	1.70 – 2.10 mm	600 – 750 N	1.52 kg/l	111,370
4508	2.00 – 2.40 mm	750 – 900 N	1.53 kg/l	71,740
4510	2.40 – 2.90 mm	950 – 1100 N	1.53 kg/l	41,050
4511	2.85 – 3.45 mm	1100 – 1450 N	1.53 kg/l	24,440
4512	3.40 – 4.00 mm	1450 – 1650 N	1.53 kg/l	15,080
4513	3.80 – 4.40 mm	1700 – 2100 N	1.53 kg/l	11,080

*) Resistance to compression: internal test with Compressive strength inspector No. 10004.1, Company Hegewald & Peschke

Additional Information:

Storage indication: Store in a dry manner in closed (original) container by room temperature.
Disposal: Please consult national laws and local regulations in force for disposal or landfill.
Safety advice: High risk of slipping due to spillage of product
Product information: Sample card ... glass beads for technical applications,
Safety Data Sheet SiLibeads Type S, Microglass; Test Reports

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All data are reference values – subject to change without prior notice