

Product Data Sheet



*The German
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SiLibeads Ceramic beads Type ZY-S

First created on: 2016-03-03
Next inspection on: 2020-12-31

Updated on: 2019-10-08
Printed on: 2019-10-08

Version: V22/2019

Product: SiLibeads Ceramic Beads Type ZY-S

Material: Ceramic Beads made of Zirconium Oxide / Yttrium stabilised

Application:

- Colour and Paint Industry:
- grinding and dispersion of coating and paint systems, e.g. car paint, corrosion protection, dip paints, industrial and structural paints, wood varnishes, coil coatings.
 - organic/inorganic pigments, e.g. titanium dioxide, ultra marine, iron oxide, etc.
 - grinding and dispersion of pigments to dye textiles, plastics and food.
- Ceramic Industry:
- grinding and processing of electric ceramics, e.g. barium titanate, piezo-electric ceramics, sensors, condensers.
 - processing of enamel.
 - medical technology, e.g. dentures and hip prosthesis.
 - magnetic ceramic, ferrite.
 - technical ceramic components, e.g. exhaust cultivator in engine technology.
- Plant Protection:
- dispersion of fungicides, herbicides, insecticides.
- Cosmetics:
- grinding of pigments and solids for lipsticks, skin and sun protection creams.
- Battery raw materials:
- ultra fine grinding and dispersion of battery raw materials for Cathode- and Anode materials, for example Lithium-Ion-batteries.

Advantages:

- high density – 6.00 kg/l.
- high wear and tear resistance, depending on the milling process - approximately 20 times better than zirconium silicate beads and about 35 times better than soda lime glass beads.
- high operating time is achievable.
- low contamination of the milling product, therefore useable for high-grade grinding of pigments, dyes, pharmaceutical and cosmetic products.
- useable for all modern types of mills and high energy mills (vertical and horizontal).
- excellent crystal structure avoids bead breakage and reduces the abrasion of mill parts.
- no radioactivity in comparison to ceramic beads made of zirconium silicate and therefore no contamination of the milling product and no costly disposal of the beads.
- conformity to 1935/2004/EC (Food legislation).

Technical Data:

Specific Weight: 6.0 kg/l
Bulk density: see table Standard Sizes
Youngs-Module: 210 GPa
Microhardness: 1150 HV₁₀
Colour: white

Assessment according to Food Legislation:

Ceramic Beads Type ZY-S are a consumer good in the sense of §2 clause 6 no. 1 of the German Food and Feed Code (LFGB), commodities and feeding products. Therefore they comply with the legal requirements.

Ceramic Beads Type ZY-S complies with the requirements § 31 of the German Food and Feed Code (LFGB) and European Food Regulation 1935/2004/EC, Article 3.

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

Lead < 1000 ppm	Cadmium < 100 ppm	Chrome VI < 1000 ppm	Mercury < 1000 ppm
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Standard Sizes (special diameters by request):

Article	Diameter	Bulk density
96015	0.10 – 0.20 mm	3.62 kg/l
96025	0.20 – 0.30 mm	3.62 kg/l
9603	0.20 – 0.40 mm	3.63 kg/l
96035	0.30 – 0.40 mm	3.63 kg/l
96045	0.40 – 0.50 mm	3.64 kg/l
9605	0.40 – 0.60 mm	3.64 kg/l
9607	0.60 – 0.80 mm	3.66 kg/l
9609	0.80 – 1.00 mm	3.66 kg/l
9611	1.00 – 1.20 mm	3.67 kg/l
9613	1.20 – 1.40 mm	3.68 kg/l
9615	1.40 – 1.60 mm	3.69 kg/l
9617	1.60 – 1.80 mm	3.71 kg/l
9619	1.80 – 2.00 mm	3.73 kg/l
9620	1.90 – 2.10 mm	3.74 kg/l
9621	2.00 – 2.20 mm	3.74 kg/l
9623	2.00 – 2.50 mm	3.75 kg/l
9625	2.30 – 2.70 mm	3.75 kg/l
9627	2.60 – 2.80 mm	3.75 kg/l
9629	2.60 – 3.30 mm	3.76 kg/l
9630	2.70 – 3.30 mm	3.76 kg/l
96315	3.00 – 3.30 mm	3.76 kg/l
96325	3.00 – 3.50 mm	3.76 kg/l
96355	3.40 – 3.70 mm	3.75 kg/l
96415	4.00 – 4.30 mm	3.75 kg/l
9644	4.20 – 4.60 mm	3.75 kg/l
9650	4.80 – 5.20 mm	3.74 kg/l
9665	6.20 – 6.80 mm	3.73 kg/l
96700	6.60 – 7.20 mm	3.69 kg/l
9685	8,30 – 8,70 mm	3.66 kg/l
961000	10.0 mm +/- 2.0 mm	3.60 kg/l
961500	15.0 mm +/- 2.0 mm	3.29 kg/l
962000	20.0 mm +/- 2.0 mm	3.29 kg/l
962500	25.0 mm +/- 2.0 mm	3.23 kg/l
963000	30.0 mm +/- 2.0 mm	3.19 kg/l
964000	40.0 mm +/- 2.0 mm	3.15 kg/l
965000	50.0 mm +/- 2.0 mm	3.10 kg/l

Chemical Analysis; Yttrium stabilised Zirconium Oxide beads:

Name	Method	Weight (reference values)	CAS-No.	EINECS
Zirconiumoxide Yttrium stabilised ⁽¹⁾		99.70 %	64417-98-7	264-885-7
Others	DIN 51001	0.30 %		

⁽¹⁾ Solid solution phase, consisting of: Zirconiumdioxide ZrO_2 + Hafniumdioxide HfO_2 ⁽²⁾: 94,40 %; Yttriumoxide Y_2O_3 : 5,30 %
Analysis according to DIN 51001.

⁽²⁾ natural origin (residue from processing of raw material Zircon sand)

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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 SiLibeads Ceramic Beads, Safety Data Sheet SiLibeads Type ZY-S

Manufacturer/Supplier: Sigmund Lindner GmbH; Oberwarmensteinacher Str. 38; 95485 Warmensteinach / GERMANY
Phone: +49-9277-9940
Fax: +49-9277-99499
Web: www.sili.eu
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All data are reference values – subject to change without prior notice