



SiLibeads Ceramic beads Type ZY-E

First created on: 2017-06-14
Next inspection on: 2019-12-31

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Version: V10/2019

Product:	SiLibeads Ceramic Beads Type ZY-E
Material:	Ceramic Beads made of Zirconium Oxide / Yttrium stabilised
Application:	SiLibeads Type ZY-E stands out for an extremely low wear and tear caused by using fine crystalline and pure raw materials in the production process. The exact roundness as well as the smooth and polished surface of the beads contributes to this low wear rate.
Colour and Paint Industry:	<ul style="list-style-type: none">- 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:	<ul style="list-style-type: none">- 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:	<ul style="list-style-type: none">- dispersion of fungicides, herbicides, insecticides.
Cosmetics:	<ul style="list-style-type: none">- grinding of pigments and solids for lipsticks, skin and sun protection creams.
Pharmaceutics:	<ul style="list-style-type: none">- nano grinding for the production of active substances and supplies substances.
Battery raw materials:	<ul style="list-style-type: none">- ultra fine grinding and dispersion of battery raw materials for Cathode- and Anode materials, for example Lithium-Ion-batteries.
Advantages:	<ul style="list-style-type: none">- high density - 6.05 kg/l- very high wear and tear resistance, depending on the milling process - approximately 40 times better than zirconium silicate beads and about 70 times better than soda lime glass beads.- highest operating time is achievable.- low contamination of the grinding 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 grinding product and no costly disposal of the beads.- conformity to 1935/2004/EC (Food legislation).
Technical Data:	
Specific Weight:	6.05 kg/l
Bulk density:	see table Standard Sizes
Youngs-Module:	215 GPa
Microhardness:	1400 HV ₁₀
Roundness (Standard):	≥ 0.96 (ratio width/length (x _{min} /x _{max}))
Colour:	white

Product Data Sheet



The German
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since 1854



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Assessment according to Food Legislation:

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

Standard Sizes:

Article	Diameter	Bulk density
990095	0.08 – 0.13 mm	3.62 kg/l
99015	0.10 – 0.20 mm	3.62 kg/l
99025	0.20 – 0.30 mm	3.62 kg/l
9903	0.20 – 0.40 mm	3.63 kg/l
99035	0.30 – 0.40 mm	3.63 kg/l
99045	0.40 – 0.50 mm	3.64 kg/l
9905	0.40 – 0.60 mm	3.64 kg/l
9907	0.60 – 0.80 mm	3.66 kg/l
9909	0.80 – 1.00 mm	3.66 kg/l
9911	1.00 – 1.20 mm	3.67 kg/l
9913	1.20 – 1.40 mm	3.68 kg/l
9915	1.40 – 1.60 mm	3.69 kg/l

Special diameters (by request):

Article	Diameter	Bulk density
99xx	max. 1.60 mm	---

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⁾: 94.35 %; Yttriumoxide Y_2O_3 : 5.35 %
Analysis according to DIN 51001.

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

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

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: Safety Data Sheet SiLibeads Type ZY-E

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