

Product Data Sheet

First created on: 2011-12-09

Updated on: 2013-04-26

Next inspection on: 2014-12-31

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Product	SiLibeads Ceramic beads Type ZY
Material	Ceramic beads made of Zirconium Oxide / Yttrium stabilised
Application	<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 - 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 - dispersion of fungicides, herbicides, insecticides - grinding of pigments and solids for lipsticks, skin and sun protection creams - nano grinding for the production of active substances and supplies substances
<u>Colour and Paint Industry:</u>	
<u>Ceramic Industry:</u>	
<u>Plant Protection:</u>	
<u>Cosmetics:</u>	
<u>Pharmaceutics:</u>	
Advantages	<ul style="list-style-type: none"> - high density – 6.00 kg/l - very 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 - 6000 hrs operating time are 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 HV
Color	white

all datas are reference values

Assessment according to Food Legislation

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



The heavy metal content of Ceramic Beads Type ZY remain within the permitted limits of European Directive 2002/95/EC - RoHS (Restriction of the use of certain hazardous substances in electrical and electronic equipment).

Compliance according to other legal regulations

Ceramic Beads Type ZY comply with the requirements of the European Regulation 1907/2006/EC on the registration, evaluation, authorisation and restriction of chemical substances (REACH), and Regulation 1272/2008/EC on the classification, labelling and packaging of chemical substances (CLP).

The natural radioactivity of Ceramic Beads Type ZY remain within the permitted limits of the Directive 96/29/EURATOM (Safety standard for the protection of the health of workers and the general public against the danger arising from ionizing radiation).

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
9604	0.30 – 0.50 mm	3.64 kg/l
96045	0.40 – 0.50 mm	3.64 kg/l
9605	0.40 – 0.60 mm	3.64 kg/l
96055	0.50 – 0.60 mm	3.65 kg/l
9606	0.50 – 0.70 mm	3,65 kg/l
96065	0.60 – 0.70 mm	3.65 kg/l
9607	0.60 – 0.80 mm	3.66 kg/l
96075	0.70 – 0.80 mm	3.66 kg/l
9608	0.70 – 0,90 mm	3.66 kg/l
96085	0.80 – 0.90 mm	3.66 kg/l
9609	0.80 – 1.00 mm	3.66 kg/l
9610	0.90 – 1.10 mm	3.67 kg/l
9611	1.00 – 1.20 mm	3.67 kg/l
9613	1.20 – 1.40 mm	3.68 kg/l
96135	1.20 – 1,50 mm	3.68 kg/l
96145	1.20 – 1.70 mm	3.69 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	-----
96355	3.40 – 3.70 mm	-----
9644	4.20 – 4.60 mm	-----
9650	4.80 – 5.20 mm	-----
9665	6.20 – 6.80 mm	-----
96700	6.60 – 7.20 mm	-----
9685	8.30 – 8.70 mm	-----
961500	15.0 mm +/- 2.0 mm	-----
962000	20.0 mm +/- 2.0 mm	-----
963000	30.0 mm +/- 2.0 mm	-----

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Chemical Analysis; Yttrium stabilised Zirconium Oxide beads				
Name	Method	Weight	CAS-No.	EINECS
		reference value in Weight-%		
Zirconium dioxide ZrO ₂ + Hafnium dioxide HfO ₂	DIN 51001	94.40 %	1314-23-4 12055-23-1	215-227-2 235-013-2
Yttrium oxide Y ₂ O ₃	DIN 51001	5.30 %	1314-36-9	215-233-5
others		0.30 %		

Additional Information	
Storage indication	Store in a dry manner in closed (original) container by room temperature. We recommend storage life of maximum 3 years.
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; Test Reports
Manufacturer/Supplier	Sigmund Lindner GmbH; Oberwarmensteinacher Straße 38; 95485 Warmensteinach / GERMANY Phone: +49-9277-9940 Fax: +49-9277-99499 Web: www.sili.eu E-Mail: sili@sigmund-lindner.com