

# Product Data Sheet



The German spirit of quality since 1854



## SiLibeads Ceramic beads Type ZS 4.1

First created on: 2018-08-23  
Next inspection on: 2021-12-31

Updated on: 2021-01-19  
Printed on: 2021-01-19

Version: V26/2021

<b>Product:</b>	<b>SiLibeads Ceramic beads Type ZS 4.1</b>
<b>Material:</b>	Ceramic beads made of sintered Zirconium Silicate.
<b>Application:</b>	SiLibeads Type ZS 4.1 are made of sintered Zirconium Silicate. These beads are very dense with a homogeneous structure as a result of our specialized production method. Therefore, they show excellent performance features in all grinding systems.
Colour and Paint Industry:	<ul style="list-style-type: none"><li>- grinding and dispersion of coating and paint systems in the middle viscosity range in most of water based systems</li><li>- grinding and dispersion of pigments to dye textiles and plastics</li><li>- grinding of inorganic and organic pigments</li></ul>
Plant Protection:	<ul style="list-style-type: none"><li>- dispersion of fungicides, herbicides, insecticides</li></ul>
Filler material- and the Coating Industry:	<ul style="list-style-type: none"><li>- process of whitener (CaCO<sub>3</sub>) for the paper production</li><li>- grinding of coatings for video and audio tapes</li></ul>
Mining Industry:	<ul style="list-style-type: none"><li>- grinding of minerals and precious metals</li></ul>

### Technical Data:

Specific Weight:	4.1 kg/l
Bulk density:	see table Standard Sizes
Youngs-Module:	100 GPa
Microhardness:	1000 HV <sub>10</sub>
Colour:	white

### Standard Sizes (special diameters by request):

Article	Diameter	Bulk density
9305	0.40 – 0.60 mm	2.39 kg/l
9307	0.60 – 0.80 mm	2.40 kg/l
9309	0.80 – 1.00 mm	2.41 kg/l
9311	1.00 – 1.20 mm	2.42 kg/l
9313	1.20 – 1.40 mm	2.43 kg/l
9315	1.40 – 1.60 mm	2.43 kg/l
9317	1.60 – 1.80 mm	2.44 kg/l
9319	1.80 – 2.00 mm	2.45 kg/l
9321	2.00 – 2.20 mm	2.46 kg/l
9323	2.20 – 2.50 mm	2.46 kg/l
9327	2.50 – 2.80 mm	2.48 kg/l
9330	2.80 – 3.20 mm	2.48 kg/l
9335	3.00 – 4.00 mm	2.49 kg/l

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### Chemical Analysis; Beads made of Zirconium Silicate:

Name	Method	Weight (reference values)	CAS-No.	EINECS
Zirconium dioxide $ZrO_2^{(1)}$ + Hafnium dioxide $HfO_2^{(1)(2)}$	DIN 51001	$\geq 57.0 \%$	1314-23-4 12055-23-1	215-227-2 235-013-2
Silicon dioxide $SiO_2^{(1)(3)}$	DIN 51001	$\leq 33.0 \%$	7631-86-9	231-545-4
Aluminium oxide $Al_2O_3$	DIN 51001	$\leq 10.0 \%$	1344-28-1	215-691-6
others		$\leq 3.0 \%$		

<sup>(1)</sup> Traces of naturally occurring uranium (U) and thorium (Th) are present in concentrations of < 0.05 %.

<sup>(2)</sup> natural origin (residue from processing of raw material Zircon sand)

<sup>(3)</sup> Silica glass, free from crystalline forms of silica

### 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 ZS 4.1; Test Reports

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