

Eccospheres®

High performance hollow glass microspheres

Eccospheres® are thin-walled, hollow glass microspheres (HGMS) developed to meet the demanding strength, weight and electrical specifications of our clients in the aerospace, defense and industrial markets. Magnification reveals the near perfect spherical shape of HGMS, which to the naked eye, resemble a fine, white, free-flowing powder. The unique properties of Eccospheres® can help reduce costs, enhance specific properties and improve material processing. Eccospheres® can be incorporated into a wide range of polymer and resin systems and can replace or combine with other materials to create composites.

Features & Benefits:

- Industry leading chemical stability
- High temperature resistance
- Good density/strength ratios
- Clean surface chemistry
- Low thermal conductivity
- Low dielectric constant
- Low dissipation factor
- Diverse array of particle size/strength/density combinations
- Inert internal gas
- Industry leading particle packing

Applications:

- Extreme processing conditions (extrusion, roller milling, injection)
- Chemically sensitive systems (silicones, vinyl esters, long pot life epoxies)
- High viscosity systems
- High temperature systems
- Low dielectric/loss tangent materials



Storage

Eccospheres® should be stored in original containers at a temperature between 15 and 25 °C. If stored in the specified conditions, they will have a shelf life of 12 months from date of production.

Health & Safety

Eye protection and gloves should be worn when working with Trelleborg Eccospheres®.

Please refer to the Trelleborg MSDS.

Eccospheres® Series

Trelleborg Applied Technologies manufactures four standard grades of Eccospheres® that exhibit unique properties to meet your needs. The four grades include the IG series, the FTD series, the SI series and the SID series. The typical properties are shown in the table.

Customization

Trelleborg Applied Technologies has the capability of tailoring the properties of high grade Eccospheres® to meet your precise material needs. From reducing weight to modulating light, Eccospheres® can drive your material innovation in varied and diverse directions.

Customized silane treatments are available for resin/microsphere coupling. Available treatments include:

- S1 - N-Phenyl Amino
- Epoxy Functional
- Alkyl Chloro Functional
- Alkyl Amino Functional

TYPICAL PROPERTIES							
Series Description	Grade	Mean Particle Size (Microns)	Collapse Pressure (psi*)	Average Density Range +/- 0.02 (g/cc)	Theoretical Thermal Conductivity (K/mK)	Drum Size (lbs/kg)	Repack Size (kg)
The IGD series exhibits a clean surface chemistry and offers customers a lower cost, industrial grade option.	IG-101	55	1500	0.35	n/a	50 lbs (22.7 kg)	-
	IG-201	65	1500	0.35	n/a	50 lbs (22.7 kg)	-
	IGD-101	55	1500	0.305	n/a	50 lbs (22.7 kg)	3.10
The FTD series exhibits a clean ion-exchanges surface that ensures compatibility with almost any resin system.	FTD-200	65	750	0.20	0.08	40 lbs (18.2 kg)	1.00
	FTD-250	55	1200	0.25	0.09	50 lbs (22.7 kg)	1.00
The SI series exhibits a clean surface chemistry with a reduced alkali content ensuring compatibility with most resin and surface coating systems.	SI-100	65	250	0.10	0.05	25 lbs (11.4 kg)	-
	SI-130	65	300	0.13	0.06	25 lbs (11.4 kg)	-
	SI-160	62	400	0.16	0.07	40 lbs (18.2 kg)	-
	SI-200	60	800	0.20	0.08	40 lbs (18.2 kg)	1.00
	SI-250	60	1800	0.25	0.09	50 lbs (22.7 kg)	1.00
	SID-160Z	60	600	0.16	0.07	40 lbs (18.2 kg)	-
The SID series exhibits a clean surface chemistry with improved strength. High strength ensures survival of the sphere when subjected to aggressive processing. This series has the highest strength to weight ratio.	SID-200Z	53	1000	0.20	0.08	40 lbs (18.2 kg)	-
	SID-230Z	52	2100	0.23	0.09	50 lbs (22.7 kg)	-
	SID-270Z	50	5000	0.27	0.10	50 lbs (22.7 kg)	-
	SID311Z	45	6000	0.31	0.11	50 lbs (22.7 kg)	-
	SID-350Z	45	6500	0.35	0.12	50 lbs (22.7 kg)	-

*Isostatic Collapse Pressure (80% Survival) - ASTM D3102-78

Table 1: Typical properties only



Contact Us

Trelleborg's Applied Technologies division is an industry expert in delivering innovative and reliable solutions that maximize performance for our customers. Our vast range of specialized, customizable materials ensure peace of mind at every stage of your project. With reliable and efficient project management and manufacturing we endeavor to take performance to new levels by achieving your goals safely, on time and within scope.

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