SHINING BEADS ,
LIFE SAVING BEADS

LUMINERALS

GLASSBEADS

Glassbeads or glass microspheres are fine spherical glasses with a diameter ranged from 1 to 1180 μ. Owing to their chemical stability and resistance to water, heat, acids and bases, they are developed into the most effective and important elements in traffic safety systems.

Properties

\ Exhaustive refractive index of 400~500 (MCD/m2/lux),

\ Minimum roundness of 80%,

\ Exhaustive transparency,

\ Specific surface strength owing to their glass texture,

\ Best types of glass used as raw materials,

\ Possibility to apply chemical silicone and silane coatings,

\ Capacity to improve road safety owing to their high reflection capacity,

\ Ideally suited for road marking.

SHINING BEADS , LIFE SAVING BEADS

shiny glassbeads used for road marking in order to improve refractive index of traffic paints. In fact, because of to the governing optical laws, glass beads increase a driver's ability to see road markings at night and in bad weather conditions in order to significantly prevent road accidents.

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The retro-reflectivity of these beads is formed by the radiation of car lights on the road surfaces. The light is refracted in the beads, allowing it to be reflected by the road marking back towards the driver. This strongly depends on the intensity of light transmitted from car lights and is the best criterion to measure the quality of road markings.

According to the statistics, the most severe and fatal road accidents occur at night due to the poor vision of drivers. With appropriate use of glass beads, road at night is largely guaranteed, and this is the lifesaving and safety property of these tiny and shiny beads.

Factors Affecting Retroreflective Efficiency of Glass Beads

\ Bead size distribution
\ Ratio between glass beads and friction material
\ Roundness of the beads
\ Purity and transparency of beads
\ Refractive index of the glass
\ Quality and composition of the road marking
\ Bead coating

GLASS BEADS

GLASS BEADS
ROAD MARKING PAINT

Premix Beads

Traffic paints containing Glassbeads have a long service life thanks to their higher thickness and having large glass beads. Glass beads provide a constant reflection over the paint service life. When the road marking paint wears out over time, the pre-mixed glass beads appear on the surface, creating a high reflection. In addition, they boost the service life of road markings.

This product produces in luminerals company with sieve analysis and with or without coating based on customer's requests.

Premix glass beads are produced according to the National 10548 and 8040, European EN1424, and BS6088 A and AASHTOM247 standards which are applicable to thermoplastic road marking paints etc.

Drop-On GlassBeads

Drop-on glass beads increase visibility in horizontal road markings and reflect light in various climatic conditions. The road marking machines have two paint sprays; the first nozzle sprays paint and the second one spreads glass beads on the road surface.

This product produces in luminerals company with sieve analysis and with or without coating based on customer's requests.

Drop on glassbeads are produced according to the National 10547 and 8040, European EN1423, and BS6088 B and AASHTOM247 standards which are applicable to all organic, solvent-based and two-components paints etc.

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Luminerals Company Profile

With production capacity of 9,000 tons per year and the support of 90 specialized and committed staff, Melal Glass Bead Co. meets the needs of a large portion of the target markets. The company exports glass beads to

Denmark	Sweden	Russia	Turkey	Oman

UAE	Qatar	India	Pakistan	Azerbaijan

and meets the domestic needs which indicates the production of quality products in accordance with current standards in traffic industry.

Luminerals company is one of the few plants equipped with the technology to apply new chemical coatings on glass beads such as silane, silicone and silane-silicone coatings.

GLASSBEADS
TECHNICAL DATA SHEETS

Glossier and Durable Than Ever

Silicon-coated glass beads are used in the drop-on method and offer excellent retroreflectivity and greater durability.

Silane coating is used in the premix glass beads and offers more adhesion to heat-treated paints and creates significant radiance and reflection.Simultaneous use of silicone-coated drop-on glass beads plus silicon-containing glass beads surprisingly results in high quality marking in a variety of applications.

Glass-Beads Technical Data Sheets
Premix BS 6088 A

Sieve	Percentage %
>1180 Micron	0-3
850 Micron	5-20
425 Micron	65-95
<425 Micron	0-10

Roundness > %80

Coated and Uncoated   Refractive Index > 1.5

Drop on BS 6088 B

Sieve	Percentage %
>850 Micron	0-5
600 Micron	5-20
300 Micron	30-75
180 Micron	10-30
<180 Micron	15-0

Roundness > %80

Coated and Uncoated   Refractive Index > 1.5

AASHTO M247 Type 1

Sieve	Cumulative Percentage %
1180 Micron	100
850 Micron	95-100
600 Micron	75-95
300 Micron	15-35
150 Micron	0-5

Roundness > %80

Coated and Uncoated   Refractive Index > 1.5

BS EN 1423 Drop on

Sieve	Cumulative Retained percentage
710 Micron	0-0
600 Micron	0-10
355 Micron	30-60
600 Micron	70-90
212 Micron	95-100

Roundness > %80

Coated and Uncoated   Refractive Index > 1.5

Glass-Beads Technical Data Sheets
BS EN 1424 Premix

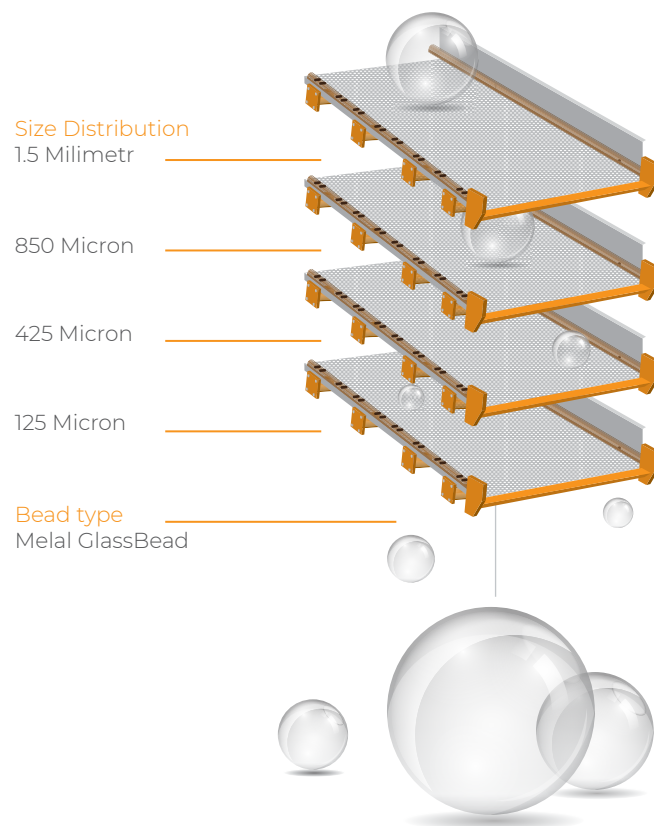| Sieve	Cumulative Retained percentage
1180 Micron	0-0
1000 Micron	0-10
850 Micron	5-20
600 Micron	45-70
425 Micron	70-90
355 Micron	95-100

Roundness > %80

Coated and Uncoated   Refractive Index > 1.5

» This product produces in luminerals company with sieve analysis and with or without coating based on customer's requests

Test results for heavy metal

Analysis Item	Unit	MDL	Limit	Test Result
Lead (Pb)	ppm	1	200	25
Cadmium	ppm	1	200	N.D.
Mercury	ppm	1	200	N.D.
Hexavalant Chromium (Cr+6)	ppm	1	200	N.D.
As	ppm	1	200	34
Sb	ppm	1	200	N.D.

Size Distribution
1.5 Milimetr

850 Micron

425 Micron

125 Micron

Bead type
Melal GlassBead

LUMINERALS

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