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Marine Newslink

October 2020

FEATURED ARTICLE
Solid Glass Beads

PHOTO(S) OF THE MONTH
Solid Glass Beads

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Question of the Month

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Happy & Prosperous
Diwali 2020

SOLID GLASS BEADS

Glass Beads are solid Glass Spheres. These are manufactured from high grade Soda Lime Silica Glass and should not be confused with Costume jewellery beads that have a hole.

Soda Lime Silica Glass Beads ("Glass Beads") are glass spheres containing about 70% SiO^2 and are manufactured from recycled glass which is thermally rounded at high temperatures. Traditionally, these Glass Beads were used as a wet grinding media in the coatings industry, however with the recent advancements and innovation in science and technology, Solid Glass Beads are found in array of uses, from small reflectors on roads, to water filtration packs, to converting your mobile camera lens into a high powered microscope.

Coloured Glass is a beautiful medium which is created from 100% post-industrial materials. These are available, in different sizes and for a variety of uses, from Standard to Venetian. With its chunky shape, this creates a better result in applications and provides a decorative surface that is colourful, cost-effective and durable. Glass manufacturers supply various glass products, like Road Marking Glass Beads, Sandblasting Glass Beads, Industrial Glass Beads, Coloured Reflective Fire Glass etc.

USES

ROAD MARKINGS

Glass beads play a decisive role in road safety. Retro-reflection causes the

vehicle's headlight to be reflected to the driver, causing the road markings to "shine". Glass beads can be mixed into the road marking material during production (intermix beads), added as the road marking is applied (injection beads) or applied to the surface of newly applied road markings before they have set (drop-on beads).

Without light reflecting glass beads.

The beads must be embedded by at least 50% of their diameter to ensure that they do not become dislodged. However, increasing the degree of bead embedment reduces the level of retro-reflectivity, so an effective balance needs to be achieved. It is inevitable that some of the beads will become covered with the marking material, but this will soon be rubbed off by passing traffic. Highest retro-reflective performance is achieved using the larger beads with smoother, more round surfaces. The quality of the retro-reflection produced by the glass beads also depends on the size and roundness of the beads, the number of beads added to the road marking and the viscosity of the road marking material. An effective distribution level of glass beads is 400 to 600 grams per square meter of road marking.

BEAD BLASTING

Conventional Blasting Materials such as Aluminium Oxide, Sand, Steel Shots will either leave a chemical film on the blasted surface or have cutting action. Shot Blasting with the Glass Beads completely prepares metal surface for any type of coating on it such as painting, plating, enamelling or glass lining.

Blasting glass beads are used for mechanical surface treatment (bead blasting) of various materials such as wood, metal or plastic. Blasting with glass beads, under pressure, with blasting equipment, maintains close control over all foreign matters, down to the base metal, without contamination and without over-stressing. The transparent, clear spherical structure bead does not cause the particles getting embedded in the workpiece during use, contaminating the workpiece or causing other damage. Using different sizes of abrasives and different operating parameters, the glass beads will have a special decorative effect by selective localized controlled blasting on the surface of the workpiece.

There are two methods for Shot Blasting:

- Wet Shot Blasting.
- Dry Blasting.

GRINDING & DISPERSING MEDIA

Glass beads have replaced the conventional grinding media: Ottawa sand, Steel balls, Pebbles, Ceramic balls etc. in Sand mills, Ball mills, Attrition mills for the following simple reasons:

- They are free from impurities, clean and can be easily cleaned.
- They do not react or get reacted with the materials that are ground.
- Being spheres, every bead in charge, takes an important part in the grinding operation.
- They have smooth glassy surfaces and hence slide without much friction, there by reducing the load on the stirring mechanism.

FILLERS

Solid glass beads that also act as a filler for resin systems and thermoplastics. They provide good adhesion between the glass and the matrix and enhance dispersibility. They show good surface finishing, good scratch, abrasion & crack resistance, good dimensional control and increased fluidity of matrix. They

appear as very fine powder but are micronized solid spherical glass.

Uncoated glass bead, made from soda lime glass, are in the form of ultrafine, resistant and fully transparent something missing with smooth and polished surface and generally looks like white powder. The beads exhibit improved scratch and abrasion-resistance. They improve surface aspects of final parts and increases fluidity, offers better mold filling and reduction & isotropy of post moulding shrinkage. Primarily suitable for thermoplastic and thermoset resins and are used in various plastic parts, raw or combined, with other additives to improve dimensional stability and properties of surface appearance and application. Their applications include automotive parts, household products, electrical devices, flooring and fabrics.

PACKAGING

Glass Beads, depending on their usage & properties, can be packed in anything from HDPE bags to cardboard boxes. The bags can be of varying sizes and will depend on order details, client's requirements and definitely, the cost factor. Reflective beads, required for road markings, can be packed in poly bags whereas the abrasive quality one is generally packed in poly lined cardboard boxes. However, the general packaging preference remains to be poly bags only. The bags & boxes can be individually shipped or in palletised or even Jumbo bags form.

TRANSPORTATION

Glass bead bags can be shipped in break-bulk form or containerised form. The palletised bags can be shrink-wrapped. Jumbo & breakbulk bags can be directly loaded on trucks or in containers.

RISKS

There are no special logistics requirements for this cargo, but bag tear may cause spillage leading to shortages and other incidents. Spillage may result in slippery conditions and being smooth, rounded surface, the beads will scatter far & wide and cause slippage, which may result in injury or accident. Scattered beads should be cleared up immediately without creating dust.

Shattered or broken glass beads will require proper disposal and can be repurposed for alternate use. Glass beads are inert hence may be disposed of in a commercial landfill site.

PHOTOS OF THE MONTH

GLASS BEAD SIZES

GLASS BEAD REFLECTIONS

BACK-TO-BASICS

QUESTION OF THE MONTH

Client shipped ODC machinery from his factory in Madhya Pradesh to a CFS, Nhava Sheva by trailer. Surveyors attended Pre-dispatch and loading & lashing survey at client's factory. At Nhava Sheva, the cargo was secured on Flat-Rack Container (FRC) by CHA people and no survey was carried out. Cargo was shipped under-deck to a European country. On arrival at discharge port, it was noted that the pallet of machinery had collapsed thus causing damages to the machinery. Shipping line's surveyor concluded that machine was not duly secured on the FRC. No joint survey or claim's surveyors were allowed to attend at this point. Policy also did not have any ODC cargo warranty.

On basis of shipping line surveyor's report, Claims was declined as policy had exclusion that "damages due to inadequate packaging are excluded".

Is the stand taken by claims team correct OR is the claim payable?

LAST MONTH'S QUESTION

Vaccines from which three countries have been entered for human trial.

LAST MONTH'S ANSWER

Russia, United Kingdom, China & also India.

CORRECT ANSWERS SENT BY: (In order of replies received)

- MITUL ATUL SHAH – General Insurance Broker (Probitas Insurance Brokers Pvt. Ltd.)
- SOHAG PARIKH – Cadila Healthcare Ltd., Ahmedabad
- V SANTHANAM – Link-K Insurance Broker Co. Pvt. Ltd., Coimbatore
- MANMOHAN TRIVEDI - Cadila Healthcare Ltd., Ahmedabad
- AZAD KUMAR - UIB Insurance Brokers (India) Pvt. Ltd., Mumbai
- BHARAT BHUSHAN - Optima Insurance Brokers Pvt. Ltd., New Delhi

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