

Global Glass Microspheres Market Outlook to 2027

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Abstracts

Glass microspheres are industrially useful lightweight materials that exhibit high mechanical performance and are flexible. These are used as reinforcing materials in a polymer matrix to produce lightweight composites. According to BlueQuark Research & Consulting, the global Glass microspheres market is expected to witness a moderate growth rate during the forecast period. Product innovations and technological advancements in the glass microspheres industry are going to drive the global market. Moreover, growth in multiple other applications such as plastics, paints, and life sciences further pushes the market growth.

Numerous industry players are quick to tap a bigger piece of the pie and are selecting different systems to accomplish new product developments and technological advancements. For instance, 3M presented a line of glass microsphere with high solidarity to thickness proportion and lightweight trademark called as Plug n Play weight reduction solution. 3M glass bubbles are weight decreasing fillers, which can be consolidated into various polymers into articles by blow molding, thermoforming, and sheet casting, among others. Moreover, Lang Fang Olan Glass Beads Co., Ltd. launched a newly modified reflective glass that can improve the retro-reflection property of the road marking line.

Of the many fillers now available to composites manufacturers, microspheres, also called micro-balloons, are the most versatile. The small hollow spheres appear like fine powder to the naked eyes and range from 12 to 300 μm in diameter. Microspheres pack a lot of functionality into a tiny package. Glass microspheres can be produced by processing perlite that is a common volcanic glass. Noble International SA (La Pin, France) produces its trademarked Noblite microspheres by chemically processing perlites. The most obvious benefit of the hollow microsphere is its potential to reduce part weight, which is a function of density. Compared to traditional mineral-based additives, such as calcium carbonate, gypsum, mica, silica, and talc, hollow

microspheres have much lower densities. For example, at a density of 0.6 g/cc, Spherical hollow glass microspheres from Potters Industries (Valley Forge, Pa.), an affiliate of PQ Corp., can displace the same volume as talc at one-quarter the weight. Densities and crush ratings, however, vary dramatically across product lines. The market is expected to continue to be driven by the ongoing product developments in the hollow glass microsphere industry.

To increase gastric retention and improve drug absorption, hollow microspheres have been developed and applied in the clinical setting for certain patients. The Savannah River National Lab (SRNL) has teamed with Mo-Sci Corporation, which produces specialty glasses, to create a porous wall, hollow glass microspheres that consists of glass “micro balloons” smaller than the diameter of a human hair. Microspheres are being further investigated in an effort to discover new applications within healthcare. While further study is ongoing, microspheres will hopefully provide enhanced patient care and improve the effectiveness of medication delivery across a broad range of disease states. Staying more on the research side, microspheres have found advanced applications in optics and photonics; their use as whispering gallery mode resonators opened the way to the development of several high-performance lasing and sensing microdevices. The search for more compact and robust structures, especially in the biosensing field, is one of the current R&D trends.

The global Glass Microspheres Market is segmented on the basis of Type and Application. The Application segment is further segmented as Construction Materials, Drilling Fluids & Cement, Insulation & Buoyancy, Paints & Coatings, Plastics & Rubber, Transportation, and Others. Construction materials were found to be the largest market shareholder in the forecasted period due to growth in the residential sector such as renovation and increasing adoption of eco-friendly buildings to reduce environmental footprint.

Microspheres are closed-cell, gas-filled particles and work as perfect insulators. The addition of microspheres improves the thermal and acoustic insulation properties of coatings or substrates. These properties have increased the usage of microspheres in roof coatings, fire-retardant materials, and sensitive acoustic equipment currently in the paints and coatings sector. White roof coatings have existed in hot countries for a long time. These coatings help to reflect solar energy back into the atmosphere, maintaining temperatures in the building. For instance, with the use of a 3M hollow glass microsphere in a coating, a high level of total solar reflection with the dry film can be achieved. This helps to reduce the need for energy-intensive cooling systems. Other examples that would benefit from the use of solar heat reflective coatings include

caravans, mobile homes, cold storage distribution centers, refrigerated vehicles, oil and gas storage tanks, cryogenic tanks and tankers, and deck coatings. The main use of energy by households in the European Union is for heating their homes which accounted for more than 64% of the energy consumption in the year 2018. The residential sector is responsible for around 30% of the total energy consumption.

Asia Pacific region accounted for the most extensive paints & coatings market in 2019, in terms of volume due to the developing construction in the region, accompanied by rising spending in the industrial sector and infrastructural developments in the developing countries such as China, India, and Indonesia. In developing countries, the residential building sector accounts for more than half of the electricity consumption. The economic growth is expected to boost residential demand for electricity, such as electric lighting, air conditioning, and other appliances. To decrease the demand for air-conditioning use, heat reflective coatings containing glass microspheres have gained a lot of interest during the past few years. COVID-19 has exposed many challenges for the paints & coatings market by impacting both the architectural and industrial sectors. Significant economies of each region are affected due to pandemic and resulted in a slowdown in activities across the industries that consume paints & coatings.

Based on geography, the global Glass Microspheres Market is segmented into Asia Pacific, North America, South America, Europe, and Middle East & Africa. North America accounts for the major share of the global glass microspheres market due to greater environmental consciousness, higher investments in technological advancements, and growing demand from the end-user industries.

The United States is the world's largest economies. The GDP of the country has decreased at an annual rate of 5% in the first quarter and 9.5% in the second quarter of 2020 due to the ongoing coronavirus pandemic. The rising demand for energy-efficient buildings and reducing greenhouse gas emissions will positively impact the market for glass microspheres in the near future. According to the Department of Energy, buildings account for 71% of the United States' electricity use and 38% of all greenhouse gas emissions. Moreover, growing infrastructure activities in the United States, which is one of the major consumers of architectural coatings, is further boosting the market for glass microspheres.

The construction industry in the United States continued to expand, owing to a strong economy and positive market fundamentals for commercial real estate, along with an increase in federal and state funding for public works and institutional buildings. The glass microspheres market in the country is mainly driven by rising investment in the

residential construction segment and growing demand for remodeling the old buildings. However, due to the ongoing global crisis, the demand in the region will be on the lower side in the year 2020 due to the dampening of construction activities. The demand in the United States is led by strict regulations regarding the energy efficiency of buildings coupled with an awareness of the glass microsphere. In 2020, construction spending in the first two months combined increased 8% from the same period in 2019, spurred by a 13% jump in single-family construction, an 11% rise in public construction, and the lowest 1% increase in private nonresidential spending. Furthermore, the flourishing oil & gas industry, which is triggering a continuous hike in drilling activities, is another reason responsible for the hollow glass microspheres market growth in the United States. The United States is the second leading producer of coal in the world, accounting for nearly 17% of world production. About one billion tons of coal is produced annually in the United States. The United States is also the world's leading producer of beryllium, soda ash, sulphur, and the third-largest producer of gold and copper.

Some of the key players in the global glass microsphere market are 3M, Potter Industries LLC, Sinosteel Maanshan New Material Technology Co., Ltd., Spheretek Technologies Limited, and Cospheric LLC among others.

Our Global Glass Microspheres Market report provides deep insight into the current and future state of the glass microspheres market across various regions. The study comprehensively analyzes the glass microspheres market by segments based on Type (Hollow and Solid), Application (Construction Materials, Drilling Fluids & Cement, Insulation & Buoyancy, Paints & Coatings, Plastics & Rubber, Transportation, and Others), and Geography (Asia-Pacific, North America, Europe, South America, and Middle-East and Africa). The report examines the market drivers and restraints, along with the impact of Covid-19 are influencing the market growth in detail. The study covers & includes emerging market trends, market developments, market opportunities, market size, market analysis, market dynamics, and challenges in the industry. This report also covers extensively researched competitive landscape sections with profiles of major companies including their market share and projects.

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