Lightweighting gets even lighter.

Low density. High performance.

If you thought that using practical, cost-effective and lightweight sheet molding composites in automotive applications wasn't possible... it's possible. 3M™ Glass Bubbles, used to lightweight these composites, can withstand the compression molding process despite their low density. You can be confident offering and installing ultralightweight automotive parts – some up to 45% lighter vs. metal or standard composites, with no reduction in dimensional stability.

Lightweight and ultralightweight SMCs are a cost-effective alternative to aluminum, steel and conventional SMCs.

Hollow, water-resistant and chemically stable glass microspheres are added to conventional resins in the production of SMCs. 3M Glass Bubbles enable lightweight SMC parts with a density below 1.0 g/cc for a total part weight reduction of up to 45% compared to steel,aluminum or standard SMCs.

Best of all, 3M Glass Bubbles can enable Class A paintable surface finishes – making SMCs and BMCs suitable for parts such as hoods, trunk lids and body panels. In fact, compounders can use 3M Glass Bubbles to help them achieve the optimal balance of performance and cost for specific SMC/BMC applications.

Designing Vehicles for a Lighter Future

A typical automobile has about 300 kg of composite parts that contribute to vehicle weight. As electric and high efficiency vehicles become more popular, reducing that weight is critical to staying competitive on fuel economy and battery range. Integrating 3M Glass Bubbles into sheet and bulk molding composite parts is a great way to do that.

3M Glass Bubbles are another example of our continuing commitment to innovation – and to helping meet the needs of the ever-changing automotive industry.

3M™ Glass Bubbles for SMC/BMC: Typical Benefits and Properties

The grades listed below are optimized for SMC/BMC formulations. All end part properties are dependent on formulation and application. For specific recommendations on your application, contact your 3M representative.

	Composite Properties			3M Glass Bubble Properties				
Product Grade	**SMC Weight Class**	**Part Density, g/cc**	**Average Part Weight Reduction**	**True Density, g/cc**	**Isostatic Crush Strength, psi**	**Minimum Survival Rate by volume**	**Particle Size 50th Percentile, microns by volume**	**Particle Size 95th Percentile, microns by volume**
Class A Surface Finish								
S32HS	Ultra Lightweight	<1.0	40%	0.32	6,000	90%	25	45
iM16K	Lightweight	1.2–1.4	30%	0.46	16,000	90%	20	40
Structural SMCs								
S32HS	Ultra Lightweight	<1.0	40%	0.32	6,000	90%	25	45
S38HS	Lightweight	1.3–1.4	30%	0.38	5,500	80%	45	90
S28HS	Lightweight	1.2–1.4	30%	0.28	3,000	90%	30	60

For reference only. The technical information and data above should be considered representative or typical only and should not be used for specification purposes.

Visit 3M.com/SMC to learn more about 3M Glass Bubbles in SMC applications.

Customer results may vary depending on formulation and application technique. For questions regarding Glass Bubbles in Automotive applications, contact 3M technical support at 1-800-367-8905.

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