



# Reducing resin. Reducing weight.

## 3M™ Glass Bubbles VS Series For lightweight seam sealers and underbody coatings

3M™ Glass Bubbles VS Series is a family of high-performance polymer additives, specifically designed for use as density reduction fillers in automotive seam sealing and underbody coatings. The intrinsic hardness and spherical shape of 3M glass bubbles make them easier and less abrasive on processing equipment than many other fillers, while enabling surfaces that have excellent resistance to scrubbing and chipping.

### Every Ounce Counts in the Automotive Industry

3M Glass Bubbles VS Series can reduce the weight of underbody coating and seam sealer by up to 50% – contributing to lower overall vehicle weight, which in turn can help meet increasingly-stringent industry and government standards. In addition, reducing weight can also help improve battery range and life in electric and hybrid vehicles.

### Reducing the Cost of Regulatory Compliance

Strict environmental regulations have pushed automakers towards the use of more expensive resins, such as acrylics, to achieve mandated reductions in their use of PVC. 3M glass bubbles can help minimize the economic impact of this changeover by displacing more of the costlier resins.

### Benefits of the 3M™ Glass Bubbles in Seam Sealing and Underbody Applications:

- Can be used in multiple sealing applications
- Reduces plastisol weight up to 50%
- Allows increased volume loading while maintaining desired viscosity
- Low aspect ratio enables faster wettability and dispersion
- Produces surfaces that are easily skived (trimmed to desired thickness)
- Can reduce sag on vertical applications
- High strength and pressure stable to achieve consistent, low density in multi-seal applications
- Helps reduce equipment wear compared to irregular fillers
- Enables Class A paintable surface with the New 3M™ Glass Bubble VS7000!

# 3M™ Glass Bubbles VS Series

For lightweight seam sealers and underbody coatings

## Typical Physical Properties

Property	3M™ Glass Bubbles VS5500	3M™ Glass Bubbles VS7000
True Density, g/cc	0.38	0.32
Strength, 80% survival, bar (psi)	385 (5,500)	482 (7,000)
Particle Size, microns		
10%	15	14
50%	40	25
90%	75	35
Effective Top Size (95%)	85	47

## Typical Reduction with 3M™ Glass Bubbles

Component	Heavyweight (Control)	Lightweight with 3M™ Glass Bubbles
PVC Resin	30 vol%	25 vol%
Plasticizer	41 vol%	35 vol%
Diluent	7 vol%	6 vol%
Filler	22 vol%	4 vol%
3M™ Glass Bubbles VS Series	-	30-50 vol%
Density	11.5–13 lbs/gal	6.5–8 lbs/gal
Density Reduction (%)	-	35–50%

## Applications

- Non-paintable interior seam seal
- Underbody sealer
- Hem seal / cosmetic seal / paintable seal
- Anti-chip
- Roof ditch

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