

What makes glass borosilicate glass - HPLC Primer

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What Is Borosilicate Glass?

Borosilicate glass is a special type of glass known for its durability, chemical resistance, and thermal stability. To be classified as borosilicate, the glass must contain at least 5% boron oxide (B_2O_3) in its composition.

This added boron makes the glass:

- More resistant to thermal shock
- Less reactive with chemicals
- Stronger and more stable than standard glass

How Is It Different from Other Glass Types?

Glass that contains less than 5% boron oxide is not considered borosilicate. These lower-grade glasses are often referred to as:

- Soda-lime glass
- Flint glass
- Sodium glass

These types are more common in everyday items like beverage bottles or window panes, but they are not suitable for high-precision laboratory use due to their lower chemical and thermal resistance.

Why It Matters in Chromatography

Borosilicate glass is the material of choice for autosampler vials, inserts, and labware because it:

- Maintains sample integrity
- Minimizes leaching of ions or contaminants
- Withstands rapid temperature changes

At MICROSOLV, we use first hydrolytic class borosilicate glass—the highest purity grade—for all our chromatography vials to ensure consistent, reliable performance.