

Silanizing Glass Autosampler Vial or Inserts for Surface Deactivation - HPLC Primer

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What Is Silanization?

Silanization involves coating the glass with a silicone-based layer to create a hydrophobic, low-adsorption surface. While traditional methods use silicone oil, MICROSOLV uses an advanced technique called Reactive Organosilane Bonding.

This method forms covalent bonds between reactive silane molecules and the hydroxyl groups on the glass surface, resulting in a semi-permanent, stable coating that resists interaction with polar compounds.

Key Benefits of Reactive Organosilane Bonding

- Long-term stability: Coatings resist water, buffers, and organic solvents for months or years.
- Lower adsorption: Dramatically reduces loss of proteins, peptides, phenols, and amines.
- Customizable chemistry: Coatings can be tailored to specific chemical classes or sample types.
- Cleaner workflows: Gas-phase methods leave no residual solvents, making them ideal for LCMS and trace-level detection.
- Extended storage capability: Excellent for long-term storage of sensitive samples.

Application Methods

Gas Phase Silanization (used by MICROSOLV) :

- Provides the most uniform and complete surface coverage.
- Excellent for long-term storage and compatibility with chromatography solvents.
- May leave trace chloride residues—important for LCMS or ion chromatography users.

Liquid Phase Silanization:

- Offers even coating but is more costly.
- Available by special order.

Considerations

- Not compatible with strong bases (e.g., concentrated NaOH), which can strip the coating.
- Higher cost than traditional silicone oil coatings.
- Hydrolytic stability may decrease after 48 hours in water.

AUTOSAMPLER

VIALS AND CAPS

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