

Deactivated Glass Vials and Inserts

National Scientific uses only the highest-quality glass to manufacture vials and inserts. Clear and Amber glass tubes have been selected for their consistent composition, dimensional stability and cleanliness. The vast majority of chemical compounds demonstrate no interaction with our standard, un-treated glass products. Strongly polar compounds present at trace concentrations may exhibit lower than expected recoveries due to interactions with Si-OH active sites that are present in all borosilicate glass. The use of a deactivated sample vial is recommended for these samples.

National Scientific employs two methods of surface treatment to produce a deactivated product for those instances where a specific compound displays an undesirable interaction with the standard glass product. Most reactive compounds will give a similar improvement in results for either deactivation method.

A few compounds will give a better result in one treatment compared to the other. We recommend that compound recovery be first evaluated in our standard glass product, followed by the NSC silanized product and finally in our Kimshield™ deactivated product.

The following are general descriptions of the glass deactivation treatments available from National Scientific.

NSC Silanized Products:

NSC Silanized glassware is the most widely applicable and popular deactivation method in use for improving the recovery of reactive compounds from glass vials and inserts. A proprietary methylating agent is introduced by vapor phase deposition onto the surface of the glassware. NSC's controlled vapor phase deposition process assures complete and uniform surface coverage. NSC Silanization lowers the surface tension of the glass and forms a hydrophobic barrier that discourages leaching of trace glass constituents into aqueous solutions and adsorption of trace sample components onto the surface of the glass. Vapor phase deposition leaves no liberated acids or other residues that are common with other treatment methods. Our automated silanization process assures that every vial will be consistently treated—leaving a minimum of unreacted silanol groups.

NSC Kimshield Deactivation:

Kimshield Deactivation is also a vapor deposition method employing a proprietary silicone fluid to coat the surface of the glass. Kimshield deactivation lowers the surface tension of the glass and forms a hydrophobic barrier similar to NSC silanization, but with a slightly different functionality. As with NSC Silanized products, Kimshield deactivated vials and inserts do not release acids, solvents or other residues. Kimshield deactivation is slightly less durable compared to NSC Silanization, but will withstand exposure to most solvents that are compatible with borosilicate glass.

