

Difference Between RSA-Pro and RSA-Pro X Surface Treatments

- Tech Information

Date: 17SEPTEMBER-2021 Last Updated: 13-DECEMBER-2025

Surface Chemistry and Stability

The primary distinction between RSA-Pro™ and RSA-Pro X™ vials lies in the type of surface treatment applied to the RSA™ glass and the resulting hydrolytic stability of each.

- RSA-Pro™ utilizes a vapor-phase deposition process in which silane-based materials are ionically bonded to the glass surface. This treatment imparts hydrophobicity but is not hydrolytically stable. As a result, RSA-Pro™ vials:
 - Are not suitable for autoclaving or freezing
 - May lose their hydrophobic properties over time, especially in aqueous environments
 - Are available only as custom order items
- RSA-Pro X™, by contrast, employs a proprietary surface modification process that covalently bonds hydrophobic materials directly to the RSA™ glass surface. This results in:
 - Exceptional hydrolytic stability, even with prolonged exposure to water
 - Compatibility with autoclaving, freezing, and freeze-thaw cycles
 - Long-term retention of hydrophobicity—stable for years under standard laboratory conditions

Summary of Key Differences

Feature		RSA-Pro™	RSA-Pro X™
Surface Bond Type	Ionic		Covalent
Hydrophobicity	Moderate		High
Hydrolytic Stability	Low		Very High
Autoclave Compatible	No		Yes
Freeze/Thaw Compatible	No		Yes
Availability	Custom Order Only		Standard Product
Long-Term Performance	Degrades in aqueous conditions		Stable for years in aqueous media

Recommendation

For applications involving aqueous solutions, long-term storage, or hydrophobic analytes such as proteins, peptides, and enzymes, RSA-Pro X™ is the preferred choice. Its robust surface chemistry ensures consistent performance and minimal analyte loss over time.



Printed from the Chrom Resource Center

Copyright 2025, All Rights Apply

MicroSolv Technology Corporation

9158 Industrial Blvd. NE, Leland, NC 28451

Tel: (732) 380-8900

Fax: (910) 769-9435

Email: customers@mtc-usa.com

Website: www.mtc-usa.com