

Ceramic Write On Patches with RSA Vials - Tech Information

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Ceramic Write-On Patches on RSA™ Vials: Why They Matter for Analytical Integrity

Accurate sample identification is essential in any analytical workflow, but the material and durability of the write-on patch on your autosampler vial can directly influence data quality, contamination risk, and long-term sample tracking. MicroSolv's RSA™ (Reduced Surface Activity) vials use ceramic write-on patches, offering critical advantages over lower-grade vials that rely on epoxy paint patches.

This difference isn't cosmetic—it is analytical.

1. Ceramic Patches vs. Epoxy Paint: Material Matters

RSA™ vials—both **amber and clear formats**—feature write-on patches made from ceramic, not epoxy paint. By contrast, many economy-grade or “certified” vials use epoxy-painted patches to reduce manufacturing cost. These patches pose several technical and operational risks:

Epoxy-Painted Patches (Lower Quality Vials)

- Outgassing risk inside packaging, which can produce background contamination before the vial is ever used.
- Smearing and loss of labeling when written on with non-lab markers, compromising sample traceability.
- Potential chemical incompatibility with solvents or alcohols, which may soften or degrade epoxy coatings.

Ceramic Patches (RSA™ Vials)

- Non-smearing and solvent-resistant, even when exposed to aggressive cleaning agents or typical LC solvents.
- Permanently bonded—the patch will not detach or deteriorate, even under extreme conditions such as liquid nitrogen storage.
- Zero outgassing, eliminating risks of volatilized epoxy components contaminating LC / LC-MS workflows.

This superior inertness aligns with the RSA™ vial's design philosophy: eliminate all unnecessary contributors to background noise, adsorption, or extractables.

2. Why Patch Chemistry Affects Analytical Quality

While often overlooked, the write-on patch represents an additional material inside the primary package. When that material is chemically unstable or prone to outgassing, it can jeopardize:

- LC/LC-MS baseline cleanliness
- Blank stability

- Trace-level detection
- Non-volatile residue (NVR) profiles
- Extractables/leachables compliance

Labs using highly sensitive detection systems—LC-MS/MS, HILIC, ANP, or trace-level impurity assays—cannot afford unknown background contributions.

Ceramic patches eliminate this variable entirely.

3. Operational Advantages for Technical Workflows

✓ Reliable labeling

Ceramic patches accept a variety of marker types (lab pens, Sharpie-style labels, cryo-markers) without smearing, rubbing off, or transferring residue.

This is essential for:

- High-throughput autosampler trays
- Cryogenic storage
- Long multi-day sequences
- GMP/GLP documentation audits

✓ Cryogenic durability

Ceramic patches remain intact even under liquid nitrogen storage. This is indispensable for:

- Bioanalytical sample archiving
- Clinical studies with long stability storage
- Metabolomics and proteomics workflows

✓ Solvent and Alcohol Resistance

Ceramic patches tolerate all common solvents, including alcoholic rinses used during aseptic workflows. Epoxy paints do not.

4. When Should You Prefer RSA™ Ceramic-Patch Vials?

Choose RSA™ vials with ceramic patches if your work involves:

- LC-MS or LC-MS/MS trace analysis
- HPLC quantitation of basic or adsorption-prone analytes
- Bioanalytical, pharmaceutical, or QC workflows
- Cryogenic storage requirements
- Solvent-intensive cleaning or decontamination steps
- Regulatory environments requiring permanent, legible vial labeling

In short: anytime sample labeling integrity and contamination control matter, ceramic patches provide measurable benefits.

Summary for Technical Users: *Ceramic write-on patches on RSA™ vials eliminate the outgassing, smearing, and solvent-sensitivity issues found in epoxy-painted patches. They provide superior durability, chemical inertness, and permanent labeling, even under extreme conditions like liquid nitrogen exposure. For labs that*

depend on clean baselines, accurate quantitation, and reliable traceability, RSA™ ceramic-patch vials are the technically superior choice.

[More about RSA vials, inserts and caps](#)



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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