Bismuth is not found in Soft-Guard Septa - Tech Information

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Is There Any Bismuth in Soft-Guard™ Septa? Technical Clarification for LC/GC/LC-MS Workflows

Short answer: No. Bismuth is **not** used in the manufacturing of either the silicone rubber or the septa assembly in **Soft-Guard™** closures.

Why this matters to analytical scientists

- ICP-MS / elemental workflows: Bismuth (Bi) is commonly monitored at trace levels. Any contribution from consumables can elevate blanks or bias recoveries. Knowing that Soft-Guard™ septa do not contain bismuth reduces risk when setting method detection limits or running contamination-sensitive sequences.
- LC-MS(/MS) background control: Even without bismuth, septa composition and purity still affect chromatographic cleanliness. Soft-Guard™ uses high-purity silicone rubber with a cast PTFE face to minimize extractables that can produce ghost peaks or ion suppression in LC-MS(/MS).

Soft-Guard™ materials & performance at a glance

- Material system: High-purity silicone rubber + cast PTFE facing designed for low extractables and reliable resealing after needle penetration.
- Needle compatibility and reseal: Soft-Guard™ septa are engineered for consistent penetration force and resealing, helping prevent coring, missed injections, and evaporation during long queues.
- Format options: Available in 9-425 screw and 11 mm snap formats and with different pre-slit geometries (e.g., X/Y) to balance penetration vs. reseal for various autosamplers (e.g., Waters™ Alliance/ACQUITY).

When to consider AQR™ instead of standard Soft-Guard™

For ultra-trace LC-MS(/MS) assays that demand the lowest possible extractables background, MicroSolv recommends the ultra-pure, colorless AQR™ septa and caps. These retain Soft-Guard™ mechanics while pushing purity for the tightest S/N and baseline requirements.

Practical guidance for method developers & QA/QC

1. Document septa composition in your method files and procurement specs—explicitly noting no bismuth content for Soft-Guard™—to streamline elemental cleanliness justifications.

2. Run solvent and matrix blanks during validation to verify background is within acceptance criteria. If baseline targets are extremely stringent, evaluate AQR™ as a next-step option.
3. Match slit geometry to instrument: pre-slit designs (X or Y) ease penetration but may slightly reduce reseal vs. single-slit; choose per autosampler/sequence needs.
4. Maintain consistent torque and handling of caps to prevent variable compression of septa and ensure sealing repeatability across trays. (General Soft-Guard™ handling guidance)

Key takeaways

- No bismuth is used in Soft-Guard™ septa or silicone rubber.
- Soft-Guard™ is designed for low extractables, easy penetration, and reliable resealing, supporting clean LC/GC/LC-MS operation.
- For ultra-trace LC-MS(/MS), upgrade to AQR™ (ultra-pure, colorless) to push background even lower while retaining Soft-Guard™ performance characteristics.

Soft-Guard™ Caps
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