

Evaporation Study Soft-Guard Caps - Tech Information

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Evaporation Study: Soft-Guard™ vs. Market-Leading Pre-Slit Caps

Purpose: Compare evaporation rates between Soft-Guard™ caps and market-leading / private-label caps with pre-slit septa.

1. Materials & Methods

- **Sample Setup:**
 - 10 vials labeled #1–#10
 - 5 Market Leader (M) caps and 5 Soft-Guard™ (SG) caps
 - AQ Brand Maximum Recovery screw-top vials used
 - **Procedure:**
 - Empty vials with caps weighed (tare weight, w_{tare})
 - 800 μ L methanol added; vials weighed again (w_0)
 - Vials stored at room temperature for ~161 hours
 - Final weight recorded (w_{161})
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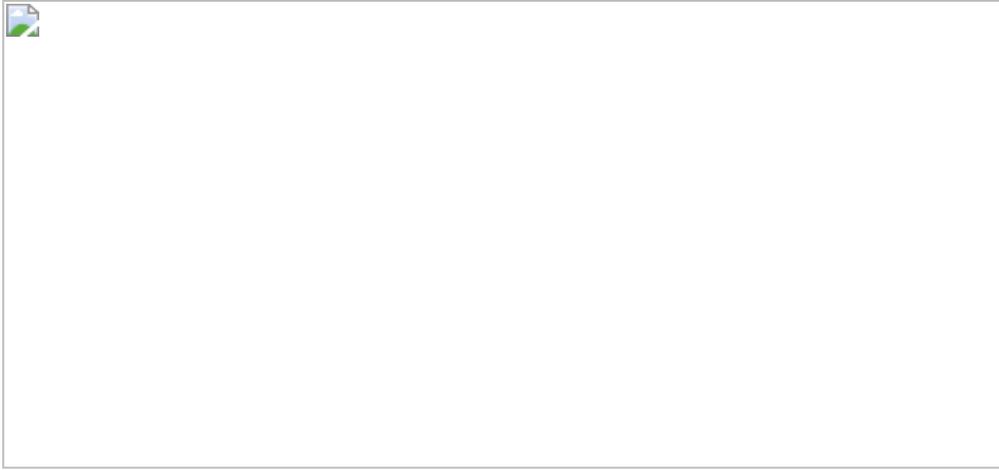
2. Visual Observations

- **Market-Leading Caps:**
 - Septa appeared flat when loose
 - Became concave when attached to vials
 - **Soft-Guard™ Caps:**
 - Loose caps showed convex septa with slightly open slit (“smiling caps”)
 - When tightened, slit closed and surface appeared flat to slightly convex
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3. Results

- Market-leading pre-slit caps lost **twice as much solvent** compared to Soft-Guard™ caps, despite Soft-Guard™ caps initially showing more exposed slits when loose.

Cap Type	Average % Loss
Market Leader (M)	5.4%
Soft-Guard™ (SG)	2.4%



Key Takeaways : Soft-Guard™ caps significantly reduce evaporation compared to market-leading alternatives. Design features (slit closure upon tightening) contribute to improved performance.



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