Headspace Crimp Caps Compatibility for all Brands of 20mm Crimp Top Vials - Tech Information

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Achieving a reliable, gas-tight seal in headspace analysis depends not only on using high-quality vials and caps, but also on ensuring proper fit between the crimp cap and the vial's 20mm serum-finish opening. MICROSOLV headspace crimp caps are engineered and quality-tested to ensure consistent performance when used with MICROSOLV-manufactured vials. Each batch is verified for dimensional precision, septa compression, and aluminum cap integrity to promote accurate and reproducible sealing.

Because the quality of the seal is influenced by the exact geometry of the vial's neck finish, consistent performance can only be guaranteed when MICROSOLV caps are paired with MICROSOLV brand vials. While MICROSOLV crimp caps may physically fit many 20mm serum-finish vials from other manufacturers, variations in glass mold design, neck diameter, lip thickness, and overall finish quality can affect sealing pressure, septa compression, and long-term vial integrity. For this reason, MICROSOLV cannot evaluate, predict, or guarantee compatibility with vials produced by other companies.

Importance of Proper Crimping Tool Calibration

Regardless of vial brand, a proper crimp requires:

- Correct vertical compression,
- Uniform lateral grip of the cap skirt, and
- Adequate septa sealing pressure.

To maintain performance, your crimping tool should be calibrated approximately every 50 crimps. Over time, crimpers can drift in alignment or force output, which leads to under-crimping (leaks, pressure loss) or over-crimping (damaged septa, cracked vial lips). Routine recalibration ensures consistent sealing strength and helps protect valuable samples during headspace analysis—especially when testing volatile compounds.

Why Consistent Fit Matters

- Leak Prevention: Even small dimensional differences can compromise internal pressure stability.
- Septa Integrity: Incorrect fit or over-compression can damage the PTFE/silicone septa.
- Instrument Protection: Poorly crimped caps may shed aluminum fragments or cause needle snagging.
- Reproducibility: Consistent vial-to-cap fit reduces variability in headspace sample volumes and pressure equilibrium.

Recommendation

For the most reliable and reproducible results—particularly in regulated applications—always pair MICROSOLV headspace vials with MICROSOLV 20mm crimp caps, and maintain a regular crimper calibration schedule.

If you need guidance selecting the appropriate caps, septa, or crimping equipment, our technical support team is available to help.
For more information about calibrating your crimping tool, please contact Technical Service for assistance.

Click here for more information about Headspace Vials and Caps

AUTOSAMPLER
VIALS AND CAPS

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