

Sterilization of All-Silicone Rubber Cap Mats – Tech Information

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All-silicone rubber cap mats are widely used in laboratory workflows involving microplates, U-2D™ micro-sample inserts, and other small-volume sample management systems. Because these environments demand strict contamination control, it is important to understand how these cap mats tolerate sterilization and whether repeated cycles affect their performance.

Autoclave Compatibility

All-silicone rubber cap mats are fully autoclavable under standard laboratory steam-sterilization conditions. They can be safely sterilized at:

- **121 °C**
- **15–30 minutes**
- **16–17 psi (1.1–1.2 bar)**

These parameters correspond to the globally accepted sterilization cycle used for microbiological decontamination and general laboratory sterilization of heat-stable materials.

Material Stability During Sterilization

Silicone rubber is inherently stable under moist heat conditions, allowing these cap mats to:

- Maintain flexibility and elasticity
- Preserve sealing performance
- Resist deformation or cracking
- Endure repeated autoclave cycles without loss of function

Because silicone does not contain fillers or layers that degrade with steam exposure, the mats remain reliable even with routine sterilization.

Recommended Use in Sterile Workflows

These features make all-silicone cap mats ideal for:

- Microbiology workflows
- LC/LCMS/GC sample prep environments
- High-throughput screening
- U-2D™ micro-sample storage
- Any application requiring minimized contamination risk

Their ability to withstand repeated sterilization cycles supports both aseptic technique and cost-effective reusability.

Click [HERE](#) for Silicone rubber sealing mat ordering information and pictures.

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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