



## how to use LVL SAFE® SCREW CAPS

Please close the cryovials with screw caps only using the specified torque values intended for this purpose.

SBS96 = 7Ncm

SBS48 = 15Ncm

SBS24 = 15Ncm

Please contact LVL for information about validated capper solutions.

The general importance of adhering to the target torque when using cryovials with a screw cap lies in several key factors:

### 1. Seal Integrity and Sample Protection

If the cap is too loose, the cryovial may not be completely sealed, increasing the risk of liquid leakage or the ingress of gases (e.g., liquid nitrogen or ambient air). Insufficient torque may allow contaminants like moisture, dust, or microorganisms to enter and compromise the sample.

A properly sealed vial ensures that the sample remains secure under cryogenic conditions without compromising its chemical or biological properties.

### 2. Avoiding Damage from Overtightening

Excessive torque can damage the threads, leading to poor sealing performance or complete failure of the closure mechanism.

### 3. Safety Under Cryogenic Conditions

At extremely low temperatures, such as those in liquid nitrogen gas phase storage, materials contract. The correct torque accounts for these effects, ensuring that the seal remains secure even under cryogenic conditions.

Improperly sealed vials can experience uncontrolled pressure build-up when warmed after cryostorage, potentially leading to hazardous ruptures.

### 4. Standardization and Reproducibility

Applying a uniform torque ensures that all vials are treated the same, which is crucial for reproducible storage and experimental conditions.

**The target torque ensures an optimal balance between sealing performance, material protection, and safety. It minimizes risks while maximizing the quality and integrity of stored samples.**

