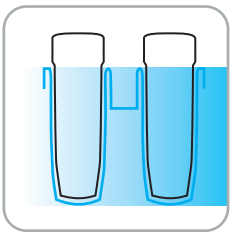

# how to use LVL® SAFE CRYOVIAL-RACKSYSTEM

**Please use only racks approved by LVL for freezing samples of the respective vial type to ensure integrity of cryovial and sample.**

Cryovials should be frozen evenly to ensure that the samples remain intact and functional. Here are the key reasons:

**1. Prevention of ice crystal formation:** Uneven cooling can lead to the formation of large ice crystals, which can damage cells or sensitive molecules like proteins and DNA. Even freezing minimizes the risk of cell damage.

**2. Consistent physical state:** If different parts of the sample freeze at different rates, it can cause stress within the material, compromising the integrity of both the sample and the vial. Even freezing ensures that all parts of the sample are in the same state.

**3. Reproducibility:** In scientific experiments and biotechnological processes, it is important that samples are frozen under identical conditions. This helps to make results comparable and reproducible.

**4. Avoidance of temperature gradients:** Temperature differences within the sample can lead to undesirable chemical reactions or alter the composition of the sample.

**5. Ensuring sample stability:** Especially for sensitive biological materials like cells, tissues, or DNA, even cooling ensures that the sample remains in a stable state and recovers as well as possible after thawing. Thus, even freezing maintains the quality and usability of the samples.
To meet the requirements for even freezing of cryovials, the storage racks from LVL Technologies feature certain characteristics that allow for even temperature distribution and efficient storage.
Each tube type has a corresponding, compatible, and validated rack system.
The storage racks are designed so that the cold can evenly affect the cryovials.
A gridlike structure along the entire height of the cryovial helps prevent cold layering and promotes even cooling.
Therefore, please use only the racks approved by LVL for freezing samples of the respective vial type.

**Please contact LVL technologies if you intend to use alternative storage racks before they are put into use.**

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