



April, 2025

TECHNICAL SERVICE BULLETIN SB-2025-04-01 Rev A

Subject: Care of Vapor (Dry) Shippers

This technical service bulletin is intended to provide information on how to best care for your IC Biomedical manufactured Vapor (Dry) Shipper to maximize the lifetime of the vessel and the safety of samples being shipped.

Handling and Storage

- Handle with care, sudden impact can damage the shipper.
- Transport shippers in the appropriate shipping container.
- Ensure shipper is always kept upright during shipping:
 - If the shipper is transported on its side, the hold time of the shipper may be reduced as much as 40% of the published hold time.
 - If the shipper is transported upside down, the hold time may only be 10% of the published hold time.
- Be careful when placing heavy items in the shipper.
 - Do not drop them in, since this could damage the neck of the dewar.
- Do not pack items that are too tall for the shipper, nor incorrectly install its lid to make the items fit.
 - Forcing the lid down can damage the neck

Defrosting and Drying the Shipper

Ensure the dewar is dried between uses. Residual moisture will reduce the amount of LN₂ adsorbed and will affect thermal performance and hold time of the shipper.

As with all liquid nitrogen storage systems, ice and frost build up over time on Shippers. Ice and frost can form on the lid if the lid is left open or if the liquid level gets too close to the underside of the lid.

It is recommended to allow the shipper to warm on its own with the lid left on. However, if there are time constraints it is possible to speed up the warming process by leaving the shipper in a dehumidified room, performing a dry nitrogen purge regulated to 4-5psig or using a heat gun NOT exceeding 160°F / 70°C in temperature. It should be noted that the shipper may still take several days to fully dry.

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It is also acceptable to invert the shipper and place the shipper upside down with the lid off on a shipping pallet. It is important that the opening of the shipper be off the ground for air to circulate inside the shipper. This method should allow the vessel to dry in a day or so. Care should be taken when inverting the shipper to avoid damage to the neck. Damage to the neck of the shipper can cause vacuum failure.

You can ensure the shipper is completely dry by weighing the vessel and checking the weight is within 1lb / 0.5 kg of the original empty weight of the shipper. You can also weigh the shipper during the complete drying process until the weight no longer decreases.

If you don't have time to dry the shipper properly between uses, IC Biomedical strongly advise you to purchase more Vapor (Dry) Shippers.

NER and Hold Time testing

Vapor (Dry) Shippers rely on two things to keep your samples cold during transit; an adsorbent material that adsorbs a certain mass of liquid nitrogen and vacuum insulation that reduces the loss of the nitrogen vapor. Once the adsorbed liquid nitrogen is all lost, the shipper will begin to warm up. IC Biomedical therefore suggest you perform Normal Evaporation Rate (NER) and hold time testing to assess your shippers integrity and fitness to ship your valuable samples.

Please refer to Technical Service Bulletin SB-2024-06-01 for instructions for performing Normal Evaporation Rate (NER) and hold time testing.

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