



Procedure For Ice Plug Removal

Introduction

If an ice plug should develop in the neck of a liquid helium storage dewar, there are a number of procedures which can be used to free it. First determine if the container is equipped with a redundant relief passage (as are most storage dewars), and if one or both are blocked. If only the center one is blocked, the liquid access port assembly may be removed from the dewar (after depressurizing) and defrosted separately outside. During this process the dewar must be sealed from the atmosphere until the access port assembly is once again ready for use.

WARNING

Keep hands and face away from the dewar opening while performing any of the procedures below. A sudden release of vapor could cause severe burning or propel particles or objects out of the dewar neck. Observe all precautions pertaining to the handling of cryogenics as outlined in the manufacturer's literature.

If both passages are blocked, or if only one is present, use the following procedure:

1. Using a piece of tubing positioned just above the blockage, direct a flow of room temperature (or heated) helium gas onto the blockage until an opening is formed to relieve the helium space.
2. Once an opening is formed, the rest of the blockage may be carefully chipped away if it is accessible, or melted away with additional gas if it is not.

WARNING

Use only a blunt object inside the neck of a dewar; the neck material is very thin and is easily damaged or punctured.

If the blockage has just formed, and or it is determined that very little pressure build-up is present in the helium space, the following alternate procedure may be used.

1. Obtain a suitable length of copper or aluminum rod and affix a stop at a point such that the rod can not accidentally drop into the reservoir when the blockage is pierced.
2. Warm the rod somewhat, if convenient.
3. Lower the rod into the neck tube to contact the blockage, and allow it to remain there until its heat capacity has been completely transferred. Repeat until an opening is formed.
4. Carefully chip away the remaining ice.

After an ice plug has been cleared and the liquid helium is consumed, the remains (ice or water) of the blockage at the bottom of the reservoir should be removed before the dewar is refilled again.

Call for information about parts, accessories, and repair services.

1.800.426.2186