

APS SAFETY NOTICE

LIQUID-NITROGEN SAFETY: MANUAL FILLING OF DEWARs

Common handling of liquid nitrogen (LN2) involves transferring the material from one storage container to another. This activity can be hazardous if proper precautions are not taken. These hazards can include: frostbite, oxygen-deficient environment, pressure build up, physical change of material properties, and oxygen condensation from the atmosphere. All of these can be mitigated by personal protective equipment (PPE), engineered safety features, and administrative controls.

When handling LN2 (or any other cryogen) always:

1. Inspect all PPE and cryogenic equipment prior to use.
2. Wear safety glasses and a face shield.
3. Wear waterproof, loose-fitting, cryogenic gloves.
4. Wear cuffless pants and shoes made of nonabsorbent material.
5. Wear a long-sleeved shirt and a lab coat or cryogenic apron. If a lab coat or cryogenic apron is not worn, shirts are to be worn outside of the pants.
6. Verify that the dewar is constructed to withstand cryogenic temperatures
7. Verify that the dewar is dry (water expands upon contact with LN2 and can crack the dewar)
8. Use open dewar flasks only in well-ventilated areas.
9. Stand clear of any LN2 boil off, vapors, or splashes
10. Use tongs or tweezers to immerse or withdraw objects from the LN2
11. To prevent pressure-causing condensation obstruction, use a cork with a groove cut into the side or a loose fitting plug.
12. Use safe lifting techniques when handling loads.

Recommended Training: ESH 145 Cryogenic Safety

References: ESH Manual Chapter 4.10 Cryogenic Liquid Safety



He's dressed for success with LN2!