

PPE: Cryogenic Protection Guidelines

Department: Industrial Hygiene and Information Management

Program: Personal Protective Equipment

Owner: Program Manager

Authority: ES&H Manual, Chapter 19, Personal Protective Equipment¹

When working with cryogenics such as liquid nitrogen (LN2) or liquid argon, cryogen-rated personal protective equipment (PPE) should be worn. This PPE must meet all applicable performance standards.

Common types of cryogenic PPE include

- Aprons
- Gloves
- Face shields
- Goggles
- Ear protection

Along with cryogen-rated PPE, pants legs and shirt sleeves should never be cuffed, as a spill may get caught in the cuff resulting in a cryo-burn. Always reduce the amount of exposed skin as much as possible. The following table presents common tasks, hazards, and PPE.

Task	Hazard	Protective Clothing
Filling a LN2 tank or dewar	Cryo-burns, frostbite	Cryogen-rated apron, gloves, face shield, and goggles, long-sleeve shirt, long cuff-less pants
Filling a LN2 tank or dewar under pressure (can produce intense noise)	Noise hazard cryo-burns, frostbite	Wear ear plugs or muffs cryogen-rated apron, gloves, face shield, and goggles, long-sleeve shirt, long cuff-less pants

Related Material

See Chapter 36, “Cryogenic and Oxygen Deficiency Hazard Safety”,² and Cryogenic and Oxygen Deficiency Hazard Safety: Personal Protective Equipment Requirements for more details.³

1 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 19, “Personal Protective Equipment”, <http://www-group.slac.stanford.edu/esh/general/ppe/policies.htm>

2 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 36, “Cryogenic and Oxygen Deficiency Hazard Safety”, http://www-group.slac.stanford.edu/esh/hazardous_substances/cryogenic/policies.htm

3 Cryogenic and Oxygen Deficiency Hazard Safety: Personal Protective Equipment Requirements (SLAC-I-730-0A06S-007), <http://www-group.slac.stanford.edu/esh/eshmanual/references/cryogenicsPPE.pdf>