Gloves and Aprons

13

William Abramovits

Abstract

To avoid contact with liquid nitrogen (LN) personnel handling it should wear gloves able to withstand extreme cold and be waterproof. None is available for submersion in LN. Aprons protecting from extreme low temperatures are available.

Keywords

Gloves • Aprons • Protection • Personnel

W. Abramovits, MD, FAAD
Department of Dermatology,
Baylor University Medical Center,
Dallas, TX, USA

Departments of Family Practice and Dermatology,
The University of Texas Southwestern Medical School,
Dallas, TX, USA

Department of Internal Medicine,
Texas College of Osteopathic Medicine,
University of North Texas Health Science Center,
Fort Worth, TX, USA

Department of Dermatology,
University of Texas Medical Branch,
Dallas, TX, USA

Texas Tech University, Health Sciences Center,
Lubbock, TX, USA

Texas A&M Health Science Center College
of Medicine, Dallas, TX, USA

Dermatology Treatment & Research Center,
5310 Harvest Hill Road, Suite #160,
Dallas, TX 75230, USA
e-mail: DrA@dermcenter.us

Nitrogen is liquid at atmospheric pressure at temperatures between 63 K and 77.2 K (−210 °C and −195.8 °C, respectively), thus it is extremely important that the LN and the equipment carrying it does not come into direct contact with the handler's skin.

One way to avoid this is by using cryogenic gloves specially made to withstand extreme cold temperatures, and that are either water resistant or water proof. Offering protection from cold temperatures down to −160 °C, waterproof gloves help protect from splashes as well, but are still not made to withstand submersion in LN. At actual LN temperature there is some stiffening of the material, but it still remains flexible enough for use. Cryogenic gloves come in varying sizes and lengths, from wrist-length to arm-length, depending on the provider (Figs. 13.1 and 13.2).

Cryogenic aprons are used to further help protect the body from the extreme temperatures of LN. These aprons offer protection up to −160 °C and are splash resistant (Fig. 13.3).

W. Abramovits et al. (eds.), *Dermatological Cryosurgery and Cryotherapy*,
DOI 10.1007/978-1-4471-6765-5_13

Fig. 13.1 Brymill CryoGloves®

Fig. 13.2 Delasco CryoGuard® waterproof gloves

Fig. 13.3 Cryo-Apron® Tempshield Cryo-ProctectionTM