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Cryogenic Liquid Burns



We have had a couple instances of employees receiving cryogenic burns from improper handling of liquid nitrogen over the past year. Cryogenic liquids such as liquid nitrogen and liquid helium can rapidly freeze human tissue and cause frostbite. Even brief contact with cryogenic liquids can cause destructive tissue damage that is very similar to a thermal burn.

The touching of non-insulated containers or other materials that have been cooled by cryogenic liquids can also cause serious skin injuries. The extremely cold surface of the cooled material will instantly freeze the moisture in your skin and cause the flesh to stick fast and tear when one attempts to withdraw from it. I am sure everyone remembers what happened as a result of the triple dog dare in A Christmas Story. Even non-metallic materials are dangerous to touch at low temperatures.

You should also be aware that cryogenic liquids can boil or splash when added to a warm container or when inserting warm objects in the liquid. Always perform these operations slowly to minimize boiling and splashing. Always use tongs to add or remove materials from cryogenic liquids.

Appropriate eye protection must be worn at all times while handling cryogenic liquids, because the liquid is almost always boiling and can splash into the eyes. Safety goggles provide the best protection for the eyes. Safety goggles and a full face shield should be worn when pouring cryogenic liquids such as when filling dewars or transferring cryogenic liquids from one container to another.

Cryogenic liquids flow very freely and can penetrate woven or other porous clothing much faster than water. Closed toed shoes and a non-porous, knee length laboratory coat should be worn when handling cryogenic liquids. If using larger quantities of cryogenic liquids, wear an apron of a non-woven material such as leather. Wear loose fitting, insulated cryogenic gloves as seen in the image to the top right of the next page when handling anything

that may have been in contact with a cryogenic liquid. The most likely cause of frostbite to the hands and body is by contact with cold metal surfaces. Frostbite will occur almost instantaneously when touching surfaces that have been cooled by cryogenic liquids.



Please don't become a statistic. Wear all appropriate PPE and use caution when handling cryogenic liquids.

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"Don't Learn Laboratory Safety by Accident!"