Liquid Nitrogen for Medical Use (Medical Device).
Instructions for use.
Read all of this leaflet carefully before you start using Liquid Nitrogen. Keep this leaflet as you may need to read it again.
Clinical guidance for Cryotherapy/Cryosurgery should be used at all times. Clinicians using liquid nitrogen for this process should be fully trained and follow internal procedures.

The liquid will vapourise on exposure to atmospheric temperatures and therefore cannot be reused.

Safety Warnings and Advice for the Clinician/Healthcare establishment

Liquid Nitrogen is an extremely cold substance with a boiling point of -196ºC, and should be treated with extreme caution at all times. Spills and leaks of liquid nitrogen should be avoided.

Improper handling of liquid nitrogen can be fatal and cause personal injury. To prevent this, the liquid nitrogen must always be handled by staff trained to use liquid nitrogen. Employers should ensure that procedures for the handling of liquid nitrogen are in place, and that staff have documented training in these procedures.

Safety risk assessments and COSHH assessments should be undertaken by establishments using liquid nitrogen and the associated equipment. Please review the Material Safety Data Sheet 8348, Gases Care with Cryogenics pamphlet and Safe Under Pressure pamphlet for further information regarding safe handling of liquid nitrogen.

Liquid Nitrogen for Medical Use (Medical Device)

Materials

Adequate emergency procedures must be in place in the event of a liquid spillage, cold burn or suspected asphyxiation.

Contact of liquid nitrogen with some materials can cause embrittlement which will result in these materials breaking more easily and an increased risk of sharps injuries/cuts for personnel handling the broken material. Where possible these materials should not be used with liquid nitrogen.

Containers used to store biosamples at cryogenic temperature either in liquid nitrogen or the vapours of liquid nitrogen may become more brittle due to the low temperatures and break more easily leading to the possibility of sharps injuries.

Other Risks

Avoid contact of liquid nitrogen with the eye by wearing a face mask.

If liquid nitrogen does enter the eye rinse eyes immediately with lukewarm water, not exceeding 37ºC for at least 15 minutes and seek further medical treatment.

Liquid Nitrogen can not be stored for any specified period of time in non pressurized/non insulated transport vessels, dewars or applicators as the liquid will boil to gas. All containers/applicators used in conjunction with liquid nitrogen should be stored in a well ventilated area to ensure any residue nitrogen can escape to the atmosphere when it boils to gas. Liquid Nitrogen should not be stored in containers that are not designed to store cryogenic gases. Refer to associated equipment manufacturer’s instructions.

Ice plugs can form in the neck of dewars and can be ejected at high velocity due to pressure build up. Avoid them by ensuring that protective caps are always used and that dewars are fully emptied before being taken out of use or put into storage.

Storage and Transfer of Liquid Nitrogen and Associated Equipment

As well as the devices used to apply/utilise liquid nitrogen in its intended clinical use, storage vessels and dewars for the bulk storage and transport of liquid nitrogen to the place of use will be required. Again, it is important that these are compatible with liquid nitrogen and comply with all relevant standards and specifications. BOC can aid clinicians/healthcare establishments with their choice of storage/transport systems if required.

Storage of Liquid Nitrogen

When choosing a pressurised vessel system for the delivery of and storage of large quantities of liquid nitrogen (> 200 litres) make sure they are properly labelled. Always follow the instructions of the manufacturer of the pressurised vessel system. BOC can aid with the selection, implementation and maintenance of these large storage facilities if required.

Follow daily checks of the storage system as described within the manufacturer’s instructions. Always ensure that the level of liquid nitrogen within the storage tank is sufficient for your needs. A lack of liquid nitrogen within the storage system may result in a delay in treatment options and damage of important samples.

Maintenance of storage equipment

Daily inspection of all liquid nitrogen storage equipment must be made by the user to detect any leaks or other malfunctions. For more information see the manufacturer’s user manual. Service and maintenance of the vessels and accessories should be performed by trained and qualified personnel. Contact BOC in case of leakage and unnatural pressure change in the main storage vessel.

Transfer of Liquid Nitrogen between equipment

When transferring from the large store to smaller transport containers/dewars or clinical applicators always follow the instructions of the manufacturers of the equipment.

Ensure that people transferring the liquid nitrogen are fully trained in handling liquid nitrogen and associated equipment.

Before filling is started, make sure the vessel containing the liquid nitrogen is stable and unlikely to tip. This is not applicable for the larger storage tanks that will be architecturally fixed in place.

Associated Equipment Use, Storage and Maintenance

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Further Information

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Please refer to further information relating to cryogenic gases and liquid nitrogen MSDS available from www.BOConline.co.uk or contact BOC Limited

Manufacturer

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