

What are the hazards and how might they harm?



Frostbite as a result of skin contact with liquid nitrogen



Respiratory tract damage from inhalation of liquid nitrogen vapour



Asphyxiation as a result of leaking liquid nitrogen



Back and muscle strain from manual handling

What PPE should the individual wear?



What other precautions should be taken?

Ensure working area is safe and clear from trip hazards.
Report any faults such as floor damage.

Handling liquid nitrogen

Safety Task Card
STCPS 07

Unit Managers – use page overleaf to list any hazards and control measures specific to your site which are not listed below

Safe System of Work

1. Only staff that are trained in this task are permitted to undertake it.
2. You must be trained to identify the alarm and know the emergency process to follow in the event of an alarm sounding and oxygen levels being below 20%.
3. Wear a face shield, non-absorbent footwear and thermal protective gloves with close-fitting ribbed cuffs, specifically designed for cryogenic use and to prevent liquid nitrogen from running inside the glove.
4. Ensure your trousers cover the tops of footwear to prevent liquid nitrogen filling shoes in the event of spillage.
5. Long-sleeved clothing must be worn to protect the arms from spillage.
6. Ensure that manual handling procedures are adhered to when undertaking the task.
7. Bulk storage vessels must only be filled by the supplier.
8. Only use containers and fittings that are designed for use with liquid nitrogen.
9. Always visually inspect Dewars for cracks, excessive wear and any other damage before refilling. Do not use damaged containers and report any defects.
10. Dispensing must only take place where there is good ventilation. When handling liquid nitrogen in a gas store, the door must be opened before decanting begins.
11. Avoid inhaling liquid nitrogen.
12. When filling Dewars, insert pipes and funnels slowly and ensure there is sufficient space left to replace lids or follow client site requirements for specific Dewar style.

Continued on reverse

If you have any concerns, stop and speak with your line manager before proceeding.

List any additional hazards or risks you have identified and control measures required to manage these.

Handling liquid nitrogen continued

Safety Task Card
STCPS 07

Safe System of Work continued

13. The receiving flask should be positioned beneath the outlet and, where a tilting storage vessel is used, it must be tilted slowly and carefully to avoid spillage.
14. Large Dewars must be moved by two porters or using a mechanical aid. Where possible the Dewar should be moved using side handles with porters facing forward.
15. When using a mechanical aid ensure there is clear visibility around the Dewar and use the main steering handle to prevent collision with other users in the area.
16. Do not travel in any lift when transporting liquid nitrogen or allow any personnel or other users to travel in a lift with liquid nitrogen.
17. Lifts can only be used if they can be operated via external controls.
18. To transport liquid nitrogen in a lift:
 - Use a non-pedestrian lift or, if none available, lock the lift off during use.
 - Put containers into the unoccupied lift.
 - Ensure containers are supported so that they cannot fall over and spill.
 - Erect a barrier in the lift with appropriate warning sign displayed: “Danger – Liquid Nitrogen, Do Not Enter” to prevent the use of the lift.
 - Remove the container promptly from the lift at the destination floor.
 - One colleague should steer from the front and one from the back.
19. In the event of liquid nitrogen coming into contact with skin or eyes, immediately flush the area with water for 15 minutes and seek medical help.

NOTE: If you have any concerns regarding being able to keep a safe distance from other building users while moving liquid nitrogen, discuss these with your manager prior to any movement.

If you have any concerns, stop and speak with your line manager before proceeding.