**SOP-10102 for Decanting of Liquid Nitrogen from a Pressurised Dewar To be customised for local equipment/ arrangements**

**ONLY TRAINED OPERATORS SHOULD USE THIS EQUIPMENT**

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|  |  | Diagram showing personal protective equipment mandatory signage |  |

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| **Potential hazards**  | * Asphyxiation due to inhalation of oxygen depleted atmosphere (Liquid Nitrogen can expand by almost 700 times its level of liquid when vaporised by to gas – displacing oxygen in enclosed spaces).
* Exposed skin contact with cryogenic liquid at -196°C can cause cold burns or frostbite.
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| **Procedure** |
| * Always decant from a pressure vessel in a well ventilated area
* Wear appropriate personal protective equipment (lab coat, cryogenic safety gloves, trousers and safety boots) and a functioning portable oxygen depletion alarm.
 | **Drager Pac 3500 Oxygen (O2) Personal Gas Detector** | **To operate depletion alarm:*** Ensure unit is in clear air.
* Switch on by pressing and holding the operator button for 3 seconds until light flashes.
* Wait for the monitor to go through the warm up sequence.
* Check the sensor is within calibration date.
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| * Check the type, quantity and pressure of the cryogenic liquid in the supply vessel.
* Check the transfer/ filling hose is suitable for purpose and there is no damage to the braiding or connection threads.
* Ensure the supply vessel pressure is ≤**10 psi** by checking the vessel pressure gauge - reduce excess vessel pressure by opening the vent valve until levels drop.
* Place an appropriate receiving flask/ transport dewar on a stable floor surface which is impervious to liquid nitrogen.
* Never leave flask unattended when filling up.
* Purge the filling hose with gas from the supply vessel by cracking open the decant valve.
* Wait until the hose is very cold before putting it into the open vessel. Use the cold gas to pre-cool warm vessels.
* Slowly open the supply vessel decant valve, initially gas will be generated due to the heat of the hose boiling the liquid.
* Continue to transfer liquid until the agreed volume has been transferred or the vessel is full to the bottom of the neck tube.
* Do not stand in the vapour cloud during filling.
* Close the supply vessel valve.
* Carefully remove the decant hose from the vessel and store appropriately.
* Place the correct lid or stopper in the vessel neck.
* Do not travel in the lifts with the full dewar.
 | Image of liquid nitrogen pressure vessel. |

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| **If alarm goes off during decanting procedure, step away from the dewar into fresh air and allow vapours to dissipate.** |

For further information see associated risk assessment for decanting of liquid nitrogen.

More information can be found on the H&S website:[**www.swansea.ac.uk/healthsafety**](http://www.swansea.ac.uk/healthsafety)

Document Control

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