**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. |
| * 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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| Document Name | Standard Operating Procedure for Decanting of Liquid Nitrogen from Pressurised Dewars |
| Document Ref. Number | SOP-10102 |
| Revision | 2.0 |
| Date of Issue | July 2018 |
| Written By | Gretta Roberts |
| Amended by | Andy Lee |
| Reviewed by | H&S Leads |
| Contact Email | healthandsafety@swansea.ac.uk |

# Amendment Record

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| **Revision** | **Date** | **Amendment(s)** |
| 0 |  | Draft |
| 1 | July 2018 | New operating procedure |
| 2 | May 2021 | Reviewed |