**Manchester Institute of Biotechnology - Risk Assessment Form**



| **Date:** 13/01/15 | **Assessed by**:  Fiona Marriage | **Validated by**:  Tanya Aspinall | **Location**:  MIB |  | **Review date:**  12/01/16 |
| --- | --- | --- | --- | --- | --- |
| **Task**  Use of solid CO2 (Dry Ice) | | | | | |

| **Activity** | **Hazard** | **Person(s) in dange**r | **Existing measures to control risk** | **Risk rating** | **Result** |
| --- | --- | --- | --- | --- | --- |
| Handling of solid CO2 (dry ice) | Asphyxiant  Contact with solid may cause severe cold burns. | User  Other members of staff in close proximity | All staff must be trained in the correct handling and transport of solid CO2.(dry ice)  All COSHH and risk assessment forms for procedures involving the use of solid CO2 are read and signed. All identified control measures will be followed.  All staff who handle/use dry ice must attend a chemical safety course which details the risks associated with dry ice, and what to do in case of a burn injury.  The following items of PPE must be worn when handling dry ice: Howie-style laboratory coat, BS EN 511 compliant low-temperature gloves and BS EN166 compliant eye protection (chemical splash proof safety glasses). A selection of safety glasses and goggles are available from MIB Stores; users are advised to visit Stores and select eye protection which fits well and is comfortable to use. Regular lab inspections monitor the wearing of PPE; users found not to be wearing PPE when the risk assessment states that it must be worn will be subject to the MIB compliance policy  Staff are forbidden from travelling in the lift with dry ice. Staff must receive training in the lift lock-off system, which must then be used when transporting dry ice between floors in the goods lift.  Dry ice must be stored in suitably insulated containers to minimise the production of CO2 gas.  Only use vessels specifically designed for use with cryogenic liquids. Non-specialised equipment may crack or fail.  Large volumes of carbon dioxide gas are evolved from small volumes of dry ice and this can easily increase CO2 concentrations in air to dangerous levels in poorly ventilated areas leading to the danger of carbon dioxide poisoning (which is rapidly fatal at CO2 concentrations >2.6%). Ensure that all work is performed in a well-ventilated area. For larger quantities of dry ice, work must be done within a fume cupboard, and an oxygen monitor/alarm must be used.  **In case of spill:** Ventilate area well to avoid hazardous CO2 concentrations from building up. Use snorkel/LEV system to assist ventilation of area. CO2 is a heavy gas & will remain in low spots without assisted ventilation.  **First Aid:**  **In all cases of exposure, call an MIB first aider for assistance.**  Inhalation: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, emergency oxygen should be given by an MIB first-aider and the emergency services summoned. The casualty should be seen by a doctor regardless of recovery rate.  Skin contact: Frozen tissues should be flooded/soaked with cold/tepid water. Don't use hot water. | Low | A |

|  |
| --- |
| **Authorisation by PI**  **I confirm that I have considered and understand the experiment and the associated hazards. I am satisfied that all of the hazards have been identified and that the control measures to be followed will reduce the risks to acceptable levels.**  **Print name: Signed:**  **Date:** |

**Declaration by researcher**

**I confirm that I have read this Risk Assessment and that I understand the hazards and risks involved and will follow all of the safety procedures stated. Where PPE has been identified as a control measure, I will ensure that it is worn.**

**Declaration by PI**

**I confirm that the researcher who has signed below is competent to undertake the work. My counter-signature indicates that I am happy for the work to proceed.**

| **Name (please print)** | **signed** | **PI countersignature** | **date** |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |