Risk Assessment Form

(This is an active document and must be maintained)

UNIVERSITY OF CAMBRIDGE

Materials Science and Metallurgy

Date: 4th October 2017

Supervisor of Room/Area: **Prof. Serena Best & Prof. Ruth Cameron**

Room or area: **2_014, 15, 16, 17, 018 (CCMM labs)** (Describe location)

Name of Assessor(s): **Wayne Skelton-Hough**

Title of Activity / Experiment / Work Area:

Handling and use of liquid nitrogen

Description of Activity / Experiment / Work Area:

Use of liquid nitrogen to chill samples, including decanting the liquid nitrogen from the dewar and transportation to the place of use.

SECTION 1: Identify all significant hazards, who or what may be affected by each individual hazard and controls in place to reduce risk to a minimum.

Hazard Description	Hazard to whom or what	Controls in place to reduce risk to a minimum
Asphyxiation	User and other lab users	• Only use liquid nitrogen in a well ventilated lab area. • Carry out a nitrogen release calculation as part of the experimental procedure risk assessment. • Only use the minimum amount of liquid nitrogen needed for the experiment • ALWAYS vacate the lab if the low O2 alarm starts to sound and NEVER enter a lab when the alarm is sounding.
Pressurized gas	User and other lab users	• Ensure that any vessels containing liquid nitrogen are either not air tight or have a pressure releasing device to allow excess gas to escape

Liquid gas	User and other lab users	• When transporting liquid nitrogen always wear a lab coat, cryogenic gloves, eye protection (close fitting safety glasses or face shield) and closed toe stout shoes. • Always use a purpose made container to transport liquid nitrogen. • Never transport liquid nitrogen in a passenger lift. • Never travel in the goods lift with a dewar of liquid nitrogen. • If using an open storage container do not decant the nitrogen directly into the container from the storage dewar.
Cold burns	User and other lab users	• Always wear cryogenic gloves, lab coat, closed toe stout shoes and safety eyewear (closed fitting glasses or face shield) when decanting liquid nitrogen • Take extreme care when decanting liquid nitrogen • Ensure that all equipment used to transport, store or uses liquid nitrogen is well insulated • Avoid prolonged exposure to cold material and cold gas • Allow component to warm up to above freezing point before handling them without using protective gloves

SECTION 2: Emergency **Procedures**

If topical exposure rinse affected area under cold water and slowly raise the temperature for 15 minutes If inhaled leave exposure area and sit or lay down and provide oxygen if necessary If spillage ensure the area is well ventilated. Evacuate any enclosed areas. Isolate spill and allow to evaporate.

Signature of Assessor(s)	Wayne Hurley	**Date:** 04/10/17
Signature of Supervisor	Rob Cameron.	**Date:** 4/10/17.

SECTION 3: Review - This assessment must be reviewed every 12 months or earlier if the basis of the original assessment is altered.

Review Date	Reviewed by (Signature)

Review Date	Reviewed by (Signature)

Change log

Change	Date	Updated by	Description
1	04/10/2017	W. Skelton-Hough	Document issued.