

# Risk Assessment Form

(This is an active document and must be maintained)



UNIVERSITY OF  
CAMBRIDGE

Materials Science and Metallurgy

Date: 15<sup>th</sup> September 2017

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

Room or area: **2\_014 (CCMM Labs)**  
(Describe location)

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

**Title of Activity / Experiment / Work Area:**

**Operation of the Freeze-dryer**

**Description of Activity / Experiment / Work Area:**

Freeze-dryer cools substances until frozen on a chilled shelf inside a sealed chamber. The pressure inside the chamber is then lowered to cause sublimation of ice in the substances, leaving a dry sample.

**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.

<b>Hazard Description</b>	<b>Hazard to whom or what</b>	<b>Controls in place to reduce risk to a minimum</b>
Electrocution	Person carrying out the procedure	Inspect all electrical equipment and power cables before use and do not use any equipment that shown any signs of damage. Ensure electrical equipment carries an up to date PAT test label before using it. Wipe up any spillages nearby.
Heat burns if the freeze dryer has been programmed incorrectly or develops a fault.	Person carrying out the procedure	Operator to be trained to programme the freeze drier by a competent user before programming the freeze drier themselves for the first time. Check the temperature of the condenser and shelf on the display before touching. If there is any smell emanating from the unit alert the group technician and switch off the freeze drier.
Cold burns	Person carrying out the procedure	Wear protective gloves if samples/shelf are touched when cold. Check the temperature of the condenser and shelf on the display before touching.
Trapping of fingers	Person carrying out the procedure	Ensure fingers are out of the way before closing door.

Hazard Description	Hazard to whom or what	Controls in place to reduce risk to a minimum
Oil fumes from vacuum pump	Person carrying out the procedure	NEVER attempt to use the freeze drier without the correct filter fitted to the exhaust of the vacuum pump. If the filter bowl contains excessive oil, bring to the attention of the laboratory technician before switching on the freeze drier.

**SECTION 2: Emergency Procedures**

If the operator is burnt when removing something from the drying cabinet, the affected area should be run under cold water for at least 15 mins. If symptoms continue, medical attention should be sought.

If the operator sustains a cut, it should be cleaned out and medical attention sought.

If the operator or other laboratory user shows signs of exposure to fumes from a sample, the appropriate MSDS and/or COSHH assessment should be consulted for appropriate emergency action.

In order to shut the equipment down in case of an emergency, switch freeze dryer off at its main plug.

Signature of Assessor(s)		Date: 15/09/17
Signature of Supervisor		Date: 19/9/17

**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)

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## Change log

<b>Change</b>	<b>Date</b>	<b>Updated by</b>	<b>Description</b>
1	11/04/2016	W. Skelton-Hough	Document issued
2	11/09/2017	W. Skelton-Hough	Reference to operating being trained before programming freeze drier added. Risk assessment title added to document footer.
3	15/09/2017	W. Skelton-Hough	Section 3 added back in to risk assessment.