

# 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:

Separation of samples using the table top Centrifuge Hermle Z 300

Description of Activity / Experiment / Work Area:

Centrifuge is used for separating substances of different density or particle size, when suspended in a fluid, by spinning them about an axis in a suitable container.

**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
Electrocution	Person carrying out the procedure	Inspect all electrical equipment and power cables before use and do not use any equipment that shows any signs of damage. Ensure electrical equipment carries an up to date PAT test label before using it.
Mechanical failure of rotating parts (often violent).	Person carrying out the operation.	<b><u>Centrifuge speed (max. revolution) must not exceed 4000 rpm.</u></b> Before use the rotor, its lid and seals must be examined for cleanliness and damage (a build-up of chemicals from spillages may cause a tube to jam in the rotor or cause corrosion that could lead to a rotor failure). Damaged rotors must not be used and should be reported to the technician. During centrifugation, it is prohibited to stay within the safety zone of 30 cm around the centrifuge or deposit hazardous substances within this area.
Contact with rotating parts	Person carrying out the operation.	Never attempt to open the lid of a centrifuge while rotor is in motion as serious injuries may be incurred

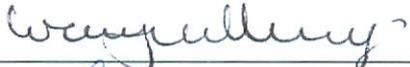
Hazard Description	Hazard to whom or what	Controls in place to reduce risk to a minimum
Sample leaks causing aerosols, stress corrosion, contamination	Person carrying out the operation and other lab users.	Check compatibility of tube material to solvent medium (some solvents may cause the tubes to swell or crack in the rotor). Do not use chemicals that are explosive, highly flammable or have vigorous chemical interaction without observing the appropriate safety precautions to minimize risk of vapor build-up.
Sample imbalance causing machine movement / walking (or stress failure of component parts).	Person carrying out the operation.	Balance the rotor to within the limits specified (take care that materials of similar densities are in opposite positions of the rotor).

**SECTION 2: Emergency Procedures**

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 centrifuge 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)

Review Date	Reviewed by (Signature)

## Change log

<b>Change</b>	<b>Date</b>	<b>Updated by</b>	<b>Description</b>
1	08/04/2016	W. Skelton-Hough	Document issued.
2	09/09/2017	W. Skelton-Hough	Typos corrected. Risk assessment title added to document footer.
3	15/09/2017	W. Skelton-Hough	Section 3 added back into risk assessment.