

Risk Assessment Form

(This is an active document and must be maintained)



UNIVERSITY OF
CAMBRIDGE

Materials Science and Metallurgy

Date: 5th April 2016

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

Room or area: **2_012 & 2_014 (CCMM Labs)**
(Describe location)

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

Title of Activity / Experiment / Work Area:

Use of Prestige autoclave to sterilize solid samples and instruments.

Description of Activity / Experiment / Work Area:

The autoclave is used to sterilize equipment and supplies by subjecting them to high pressure saturated steam at 121 °C for around 15–20 minutes depending on the size of the load and the contents.

The Prestige autoclaves in the CCMM group can only be used for solid samples. Liquid samples **must not** be sterilized in these autoclaves.

NOBODY is permitted to use this autoclave until training has been given by the laboratory technician (Wayne Skelton-Hough) and the training sheet has been signed to this effect.

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 shown any sort of damage. Ensure electrical equipment carries an up to date PAT testing label before using it.
Physical injury to persons in the vicinity from the rapid release of stored energy resulting from autoclave failure (e.g. failure of doors/lids)	Person carrying out the operation and other lab users.	Ensure the lids/doors of the autoclave are closed properly before starting. Items for re-use should be able to withstand the conditions generated by the autoclave equipment (thermo-stable). Waste items that are not for re-use (and may not be thermo-stable) should be held in suitable containers. If there are any problems with equipment abort the process and inform those in authority.

Hazard Description	Hazard to whom or what	Controls in place to reduce risk to a minimum
Physical injury from exploding vessels that have become pressurised during processing (e.g. glass containers)	Person carrying out the operation and other lab users.	Tops of bottles/containers should not be fully tightened, but loose enough as to allow for gaseous escape and prevent them becoming pressurized when heated. Containers holding liquids should not be overfilled to avoid the contents from 'boiling-over' into the autoclave chamber.
Scalding / burns from steam or the hot contents of items being processed	Person carrying out the operation and other lab users.	Allow the autoclave chamber to return to atmospheric pressure and a reasonable temperature before attempting to open the door/lid to remove items. Interlocks and pressure release valves should not be overridden to reduce cycle times. On opening autoclaves be mindful of the possibility of escaping steam and erupting containers – avoid placing unprotected body parts in the escape path. Hot items removed from the autoclave should be placed in a suitable cooling-area and indicated as 'hot' to warn others of the hazard.

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 autoclave off at its main plug.

Signature of Assessor(s)		Date: 13/04/2016
Signature of Supervisor		Date: 18/7/16

Change log

Change	Date	Updated by	Description
1	05/04/2016	W. Skelton-Hough	Document issued.