

Risk Assessment Form

(This is an active document and must be maintained)



UNIVERSITY OF
CAMBRIDGE

Materials Science and Metallurgy

Date: 2nd June 2017

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

Room or area: **2_018 (CCMM Labs)**

(Describe location)

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

Title of Activity / Experiment / Work Area:

Operating the AutoPore IV Mercury intrusion porosimeter to analyse pore size distribution in solid samples.

Description of Activity / Experiment / Work Area:

Measurement of sample porosity using the Micromeritics AutoPore IV mercury Intrusion porosimetry at static pressures up to 30,000 psi.

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 label before using it.
Mercury leakage from AutoPore IV or penetrometer	Operator, other lab users, the environment	The floor in lab 2_018 is sealed. All penetrometer emptying to be carried out on designated area by designated personnel only. Servicing of AutoPore IV to be carried out by Micromeritics engineers or other competent personnel only.

Hazard Description	Hazard to whom or what	Controls in place to reduce risk to a minimum
Cuts from broken glass to operator and spillage of Mercury caused by penetrometer breakages	Operator, other lab users, the environment	<p>Penetrometers to be handled and cleaned by designated personnel only.</p> <p>When transferring a filled penetrometer to the balance extreme care to be exercised and the penetrometer to be carried with the stem vertical to prevent Mercury spillage.</p> <p>Any breakages or spills to be cleaned up immediately using the provided vacuum suction device and/or proprietary mercury spill kit provided.</p>
Absorption or inhalation of mercury or mercury vapor.	Person carrying out the procedure	<p>Autopore IV to only be operated by designated personnel with local extraction switched on. Lab coat, protective gloves and safety glasses to be used at all times when handling Mercury, pentrometers or loading/unloading the Autopore IV.</p> <p>Operator subjected to regular health screening.</p> <p>All emptying and cleaning of penetrometers to be carried out on designated area.</p> <p>Any Mercury spills to be cleaned up immediately using the provided vacuum suction device and/or proprietary mercury spill kit provided.</p>

SECTION 2: Emergency Procedures

If In case of a mercury spillage, evacuate the area and clean up the mercury spill immediately using the vacuum equipment and/or a proprietary mercury spill kit. If the spillage is large evacuate the laboratory, switch on local extraction and then clear up spill using the vacuum equipment and/or proprietary mercury spill kit. When cleaning up a Mercury spill, gloves, lab coat and safety eyewear MUST be worn.

If Mercury is ingested, seek medical advice. DO NOT induce vomiting. If Mercury comes into contact with the skin, remove any contaminated clothing and wash the affected area with soap and water. In case of eye contact remove contact lenses (if worn) and promptly wash out eyes with plenty of water lifting eyelids for at least 15 minutes. If irritation persists seek medical attention.

In order to shut down the equipment in an emergency, shut down the PC in the usual way (*if possible*), switch all electrical equipment off at its main sockets.

Signature of Assessor(s)	<i>Wayne King</i>	Date: 02/06/17
Signature of Supervisor	<i>Rishi Cameron</i>	Date: 14/6/17

Change log

Change	Date	Updated by	Description
1	05/04/2016	W. Skelton-Hough	Document issued.
2	02/06/2017	W. Skelton-Hough	Risk assessment title added to footer. Reference to servicing AutoPore IV be Micromeritics engineers added.