

Safety Documentation

Please select the forms you require by selecting the check boxes below.
You can select more than one.

Risk Assessment **Method Statement** **Chemicals COSHH**

Once you have made your selections, scroll down and complete the forms.

Buttons: [+] will add a row to a list [-] will delete a row from a list

You may save this file to a local drive at any time.
When you have finished, save the file to a local drive and email it to your supervisor for authorisation.

Supervisors - There is a sign-off section at the end of the document set that must be completed.

Staff may "self authorise", (as a supervisor), but the forms must still be submitted to the DSO for approval.

IMPORTANT:

YOU ***MUST NOT*** START ANY PRACTICAL WORK UNTIL THESE FORMS HAVE BEEN RETURNED TO YOU
WITH **BOTH** YOUR SUPERVISOR'S AND DSO'S APPROVAL SIGNATURES ATTACHED.

Please complete these fields

School or Service	Wolfson School of Mechanical, Electrical and Manufacturing Engineering
Department	Centre for Biological engineering
Originator name	Kulvindar Sikand
email address	k.p.sikand@lboro.ac.uk
Location	Garendon Wing, H30 and Wolfson Building T208b
Project / Activity / Task	Use of Nikon Eclipse Ti Microscope and Olympus CKX41 inverted microscope.
Supervisor Name	Mark Taylor

Risk Assessment

Reference

Location

Originator

Project / Activity / Task

Is this process risk assessment for a : Laboratory / Workshop General use

Category 1: Machinery & work equipment:				
Design and Construction	Mechanical hazards	Electrical hazards	Radiation hazards	
N/A	N/A	Electrical test cables current	Ultra Violet	+
Category 2: Workplace				
Slips/Trips/Falls on the level				+
Risk of asphyxiation (oxygen depletion) - H30 only				X
Category 3: Hazardous and/or Harmful substances				
Biological substances (Infection)				X
Liquid Nitrogen / Cryogenics				X
Toxic substances				X
Mercury bulb usage, chance of explosion.				X
Sharp glass from broken microscope slides.				X
Exposure to unfiltered UV light if light housing removed.				X
Hot surface of bulb housing				X
Category 4: Work activity				
Visual fatigue (e.g. >3hrs at VDU)				X
Category 5: Work organisation				
Research and Technical staff				X

Explain the risks associated with these hazards				
People / Groups at risk	<input type="text" value="Operator and people in proximity"/>			X
Enter risk details here:-	Impact	Probability	Risk Score	
<input type="text" value="Biological substances"/>	<input type="text" value="Harmful"/>	<input type="text" value="Unlikely"/>	Medium	
What are the control measures?	Lowers Impact	Lowers Probability	+	
<input type="text" value="Any unfixed biological material to be contained in a lidded container such as a petri dish or tissue culture flask."/>	<input type="text" value="Significantly"/>	<input type="text" value="Significantly"/>	X	

Process Risk Assessment Form (Continued)

To transport any unfixed material in a secondary container.	Significantly	Significantly	x	
			Residual Risk	
			Low	
People / Groups at risk	Everyone in the room			x
Enter risk details here:-	Impact	Probability	Risk Score	
Liquid nitrogen, O2 depletion (H30 only)	Very Harmful	Unlikely	High	
What are the control measures?	Lowers Impact	Lowers Probability	+	
There is an oxygen monitor present in H30.	Significantly	Significantly	x	
Cryostorage units stored in the room, if access to the units is required while the microscope is in use the storage unit should be taken to more suitable area and returned when closed.	Significantly	Significantly	x	
			Residual Risk	
			Low	
People / Groups at risk	Everyone in the room			x
Enter risk details here:-	Impact	Probability	Risk Score	
Mercury bulb usage, chance of explosion. Mercury vapour	Very Harmful	Unlikely	High	
What are the control measures?	Lowers Impact	Lowers Probability	+	
Users to be trained in the proper use of the mercury bulb to minimise the chance of explosion. This includes the logging of times that it is used so that the bulb can be changed at recommended time.	Significantly	Significantly	x	
			Residual Risk	
			Low	
People / Groups at risk	Operator and people in proximity			x
Enter risk details here:-	Impact	Probability	Risk Score	
Broken glass from microscope slides.	Harmful	Unlikely	Medium	
What are the control measures?	Lowers Impact	Lowers Probability	+	
To transport the slides in a secondary container.	Significantly	Significantly	x	
To have a sharps bin present in the lab for proper disposal of glass.	Significantly	Significantly	x	
			Residual Risk	
			Low	
People / Groups at risk	Operator and people in proximity			x
Enter risk details here:-	Impact	Probability	Risk Score	
Toxic substances	Very Harmful	Unlikely	High	
What are the control measures?	Lowers Impact	Lowers Probability	+	
To complete a COSHH for specific substance used and anyone using substance be familiar with hazards. To transport samples in a secondary container to the microscope room (H30) and T208b.	Significantly	Significantly	x	

Process Risk Assessment Form (Continued)

			Residual Risk
			Low
People / Groups at risk	Operator and people in proximity		X
Enter risk details here:-	Impact	Probability	Risk Score
Exposure to UV light causing eye damage.	Very Harmful	Highly Unlikely	Medium
What are the control measures?	Lowers Impact	Lowers Probability	+
Only people authorised/competent to remove the mercury bulb light housing should do so as this removes the filtering for the UV light which can cause eye damage.	Significantly	Significantly	X
			Residual Risk
			Low
People / Groups at risk	Everyone in the room		X
Enter risk details here:-	Impact	Probability	Risk Score
Slips/Trips/Falls on the level	Harmful	Unlikely	Medium
What are the control measures?	Lowers Impact	Lowers Probability	+
To ensure that H30 and T208b is kept tidy and that there are no items which are left obstructing access to the microscope. Any spillages in area to be dealt with in accordance with CBE SOP	Significantly	Significantly	X
			Residual Risk
			Low
People / Groups at risk	Operator		X
Enter risk details here:-	Impact	Probability	Risk Score
Hot surface of mercury bulb lamp housing	Harmful	Likely	High
What are the control measures?	Lowers Impact	Lowers Probability	+
Ensure that there is space around the lamp housing so it is not in contact with anything and to make sure that user is aware that housing gets hot so avoid contact with hot surfaces	Significantly	Significantly	X
			Residual Risk
			Low
People / Groups at risk	Everyone in the room		X
Enter risk details here:-	Impact	Probability	Risk Score
Exposure to Covid-19	Very Harmful	Highly Unlikely	Medium
What are the control measures?	Lowers Impact	Lowers Probability	+
Follow all national, local and University Covid-19 guidelines, and respect local lab Covid rules and risk assessment. To make sure that social distancing takes place and to wear masks while working to mitigate against times when this isn't possible. Distancing should be 2 metre, but 1M+ is allowed where all concerned are wearing face coverings. Sanitise hands using available gels, or wash hands with soap and water for 20 seconds min. Check local Covid tier rating	None	Moderately	X

Process Risk Assessment Form (Continued)

	Residual Risk
	Low
+ Add another Risk	

Who may be at risk as a result of this activity?

Personnel Group	Maximum (Task setup/ Re-configuration)	High (Performing the task)	Medium (Observing the task)	Low (Present, but not involved)	Lone Working (Out of hours)	No Exposure Permitted	Total
Academic Staff	0	0	0	0	0	0	0
Technical Staff	0	2	0	0	0	0	2
Research Staff (PDRA)	0	2	0	0	1	0	3
Research Students (PhD)	0	2	0	0	1	0	3
Students (Undergraduate / MSc)	0	0	1	0	0	0	1
Visitors	0	0	0	1	0	0	1
Others - Over-type as needed	0	0	0	0	0	0	0
Total	0	6	1	1	2	0	10

With these controls in place, the risk is:

The activity is LOW RISK - and is effectively controlled

Safety Method Statement

Reference SAF/MEME/6727

Location Garendon Wing, H30 and Wolfson Building T208b Originator Kulvindar Sikand

Project / Activity / Task Use of Nikon Eclipse Ti Microscope and Olympus CKX41 inverted microscope.

What equipment will be used in this activity? +

The Nikon Eclipse Ti Microscope and the Olympus CKX41 inverted microscope. Plus associated mercury bulbs, cameras and computers. x

What training must be completed to do this activity? +

Users should be trained in the use of the Nikon Ti Microscope they should also be aware of the hazards posed by liquid nitrogen as cryostorage units are stored in this room. Users should also be aware of the hazards of using a mercury bulb. x

What chemicals are being used? (These must be included in the COSHH Form) +

This will depend on the sample preparation carried out by the user. They will have to complete a COSHH for any chemicals used in any preparation of samples. x

Spill and accident procedures. +

Depending on the size of the spillage the room should be evacuated and any users in the lab informed of the spillage. Two people should be involved in the spillage, one to clean the spill and the other to inform users and lab management. There are biological and chemical spill kits available in the lab. Any spillage on the actual microscope should be cleaned using 70 % industrial methylated spirits. In the event of a mercury bulb exploding the lab should be evacuated and the area ventilated. The departmental safety officer should be contacted to help with the clean up process using a mercury spill kit. x

Procedure in the event of an emergency. (How to leave the process in a safe condition in such an event) +

Cap any samples and leave by the nearest exit. Only return when informed that it is safe to do so x

References. +

SOP072 Use and maintenance of the Nikon Eclipse Ti microscope and camera.
SOP022 Use and maintenance of the Olympus CKX41 inverted microscope. x

Detailed sequential description of the process

Process step	Precautionary measures and comments	+
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Safety Method Statement (Continued)

Process step	Precautionary measures and comments	+
<p>For the Nikon Eclipse microscope. The buttons for switching on the microscope are numbered and should be done in numerical order. The only button which shouldn't be pressed unless fluorescence microscopy is being carried out which is to power up the mercury bulb.</p> <p>For the Olympus CKX41 inverted microscope there is a switch on the side of the microscope to switch on. There is a separate power supply for the mercury bulb which should only be pressed if you know that you are going to look at fluorescent samples.</p>	<p>Ensure that items have been PAT tested.</p> <p>If the mercury bulb is being used it is important not to switch it on and off without allowing it to properly heat up and cool down as this will increase the chances on an explosion. Once it is on the bulb should remain on for a minimum of 1 hr and be allowed to cool for at least 30 mins to restart after being switched on. It is better to plan usage and minimize switching on and off to avoid stress on the lamp. Ensure that the time of use is logged in the book so that the lamp can be changed at the correct point. Please be aware that the lamp housing will get very hot. It is important to ensure that there is enough space around the lamp housing to allow air to circulate and to make sure that no trailing cables are in contact with the light housing. Please note that if the mercury bulb is coming up to its recommended hrs usage to inform the responsible person/lab manager.</p>	<p>X</p>
<p>Please refer to SOP072 Use and maintenance of the Nikon Eclipse Ti microscope and camera and Nikon Eclipse Ti-E user manual for more details on usage.</p> <p>For the Olympus CKX41 inverted microscope refer to SOP022 Use and maintenance of the Olympus CKX41 inverted microscope.</p>	<p>Important that the lamp housing for the mercury bulb is not removed unless you are trained to do so safely, this would potentially mean that your eyes would get exposed to unfiltered UV light which may damage them.</p>	<p>X</p>
<p>Once samples have been looked at please take your time to shut the microscope down correctly.</p>	<p>Ensure that you sign the usage log and allow the mercury bulb to cool down before covering the microscope. Make sure that the microscope is left in a clean state with particular regard given to spillages (use 70% IMS).</p>	<p>X</p>

Supervisor and Departmental Safety Office (DSO) Sign-off.

Supervisors

Please check the documents above and if you want to approve them:

- 1) Electronically sign this document
- 2) Save it to a local drive (You will be prompted to do this)
- 3) eMail the signed document to the DSO.

DSO

Please review the documents above and if you want to approve them:

- 1) Enter the reference numbers as appropriate
- 2) Electronically sign this document
- 3) Save it to a local drive (You will be prompted to do this)
- 3) eMail the signed document to the originator

IF YOU DO NOT WANT TO AUTHORISE THE FORMS,

Please do not sign the form, but click the "Not Approved" check-box and return it to the originator by email stating why and what you expect them to do to put it right in the comments box below.

Not Approved

Supervisors Signature

Form Reference Numbers

Risk Assessment

SAF/MEME/6727

Method Statement

SAF/MEME/6727

COSHH Assessment

DSO Signature

This document set must be reviewed and re-approved at the following times:

- 1) After the first occurrence of the activity described above (Review only)
- 2) After any change to the procedure or reagents used
- 3) After any incident resulting from this activity
- 4) At least annually from the date of approval

Next Review:

18 Mar 2022

Review comments