

## 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	Carolyn Kavanagh
email address	c.l.kavanagh@lboro.ac.uk
Location	T208b Wolfson School
Project / Activity / Task	Use and Maintenance of Faster BS-G Biological Safety Cabinet
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: Workplace	+
Falling/moving objects/materials	X
Confined work area (striking objects)	X
Category 2: Hazardous and/or Harmful substances	+
Sensitising substances	X
Biological substances (Infection)	X
Cancer causing substances	X
Toxic substances	X
Electrical Hazard	X
Category 3: Activity	+
Highly repetitive actions	X
Lone working out of hours	X
Sitting for long periods	X
Category 4: Organisation	+
	X

#### Explain the risks associated with these hazards

People / Groups at risk	<input type="text" value="Operator only"/>		X
Enter risk details here:-	Impact	Probability	Risk Score
<input type="text" value="Risk of front panel crushing fingers"/>	<input type="text" value="Harmful"/>	<input type="text" value="Highly Unlikely"/>	Low
What are the control measures?	Lowers Impact	Lowers Probability	+
<input type="text" value="The front panel of the BSC ( containing the UV light) is removed during the start up of the equipment and placed to the side of the equipment. Laboratory users are trained how to remove and replace this panel safely to avoid injury to themselves . The panel is put in place and then handles are turned to secure it so limited risk of fingers being trapped."/>	Significantly	Significantly	X
<input type="text" value="All Laboratory users are fully trained to use the equipment and is recorded in training files"/>	Significantly	Significantly	X
<input type="text" value="BSC is inspected every 12 months"/>	Significantly	Significantly	X

## Process Risk Assessment Form (Continued)

			Residual Risk
			Low
People / Groups at risk	Everyone in the room		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Risk of Infection from biological material	Slightly Harmful	Highly Unlikely	Low
What are the control measures?	Lowers Impact	Lowers Probability	<b>+</b>
All Biological material is of a good provenance and screened for infectious agents. Any material which is not screened is used under special quarantined controlled conditions. All Biological work is subject to an approved risk assessment.	Significantly	Significantly	<b>X</b>
All laboratory users are trained how to work aseptically to ensure risks are minimised	Significantly	Significantly	<b>X</b>
All Biological Safety Cabinets are well maintained to ensure they work effectively to protect the user and others working in the room . Daily checks are made to ensure equipment is working correctly and within safe limits. All BSC's are inspected and tested annually.	Significantly	Significantly	<b>X</b>
All Laboratory users wear gloves at all times and other PPE as appropriate	Significantly	Significantly	<b>X</b>
			Residual Risk
			Low
People / Groups at risk	Operator only		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Electrical shock from using equipment	Harmful	Highly Unlikely	Low
What are the control measures?	Lowers Impact	Lowers Probability	<b>+</b>
Equipment has bi-annual PAT testing and regular visual checking of cables	Significantly	Significantly	<b>X</b>
			Residual Risk
			Low
People / Groups at risk	Everyone in the room		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Exposure of working with irritant/sensitising chemicals	Harmful	Unlikely	Medium
What are the control measures?	Lowers Impact	Lowers Probability	<b>+</b>
A COSHH Risk Assessment will be done for each hazardous chemical and preventative action identified.	Significantly	Significantly	<b>X</b>
Laboratory users are trained on how to work with chemicals safely including dealing with spills.	Significantly	Significantly	<b>X</b>
Laboratory users wear appropriate PPE as identified in the risk assessment	Significantly	Significantly	<b>X</b>
Chemicals are discouraged from being used in the Biological Safety Cabinet to protect the user from exposure and damage to the HEPA Filter. A Fume Hood should be used.	Significantly	Significantly	<b>X</b>

## Process Risk Assessment Form (Continued)

			Residual Risk
			Low
People / Groups at risk	Operator only		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Lone working in the Biological Safety Cabinet	Slightly Harmful	Likely	Medium
What are the control measures?	Lowers Impact	Lowers Probability	<b>+</b>
A separate Out of hours risk assessment is completed to address any additional risks before lone working is approved. All users will use the lone working app.	Significantly	Significantly	<b>X</b>
All Laboratory users are fully trained before they are authorised to work in the laboratory. Part of the training includes procedures for working out of hours.	Significantly	Significantly	<b>X</b>
			Residual Risk
			Low
People / Groups at risk	Everyone in the room		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Risk of working with cancer causing agents	Very Harmful	Unlikely	High
What are the control measures?	Lowers Impact	Lowers Probability	<b>+</b>
A COSHH Risk Assessment is completed to address the risks of working with cancer causing agents	Significantly	Significantly	<b>X</b>
Laboratory users are trained on the how to work with hazardous chemicals	Significantly	Significantly	<b>X</b>
A Code of Practice for the use of carcinogens is recommended reading for anyone working with this type of material	Significantly	Significantly	<b>X</b>
A separate disposal route is designated for carcinogenic materials to decrease exposure to others in the room	Significantly	Significantly	<b>X</b>
			Residual Risk
			Low
People / Groups at risk	Everyone in the room		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Risk of Use of UV for Sterilisation	Harmful	Likely	High
What are the control measures?	Lowers Impact	Lowers Probability	<b>+</b>
UV function cannot be activated without the front panel being in place to protect the user. User is not exposed to the UV.	Significantly	Significantly	<b>X</b>
			Residual Risk
			Low
People / Groups at risk	Operator only		<b>X</b>
Enter risk details here:-	Impact	Probability	Risk Score
Sitting at BSC for long periods and repeatative work	Slightly Harmful	Likely	Medium

## Process Risk Assessment Form (Continued)

What are the control measures?	Lowers Impact	Lowers Probability	+	
Adjustable seating with back rests to ensure good working height and comfortable position. Workers are encouraged to take regular breaks. Workers are trained to use pipettes and pipette boys which are used in repeatative tasks.	Significantly	Significantly	x	
				Residual Risk Low
People / Groups at risk	Everyone in the room			x
Enter risk details here:-	Impact	Probability	Risk Score	
Chemical buildup in BSC can cause a fire	Harmful	Highly Unlikely	Low	
What are the control measures?	Lowers Impact	Lowers Probability	+	
The use of certain chemicals in the BSC is prohibited so not to damage the HEPA filters and reduce circulation of toxic vapours in the room.	Significantly	Significantly	x	
				Residual Risk Low
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
Risk of injury when removing front panel	Harmful	Unlikely	Medium	
What are the control measures?	Lowers Impact	Lowers Probability	+	
Operators are trained how to remove panel and put it back safely	Moderately	Moderately	x	
The panel is placed securely in a vertical position at the side of the BSC when BSC is in use.	Slightly	Slightly	x	
Operators wear enclosed sturdy shoes to protect toes in the unlikely event that the panel should fall onto feet.	Moderately	Moderately	x	
				Residual Risk Low
+ Add another Risk				

With these controls in place, the risk is:

**The activity is LOW RISK - and is effectively controlled**

# Safety Method Statement

Reference SAF/MM/6505

Location T208b Wolfson School

Originator Carolyn Kavanagh

Project / Activity / Task Use and Maintenance of Faster BS-G Biological Safety Cabinet

What equipment will be used in this activity?	+
Faster Biological Safety Cabinet in T208b	X

What training must be completed to do this activity?	+
CBE laboratory induction Training	X
Biological Safety cabinet Training	X
Lab Leader Induction	X

What chemicals are being used? (These must be included in the COSHH Form)	+
None. Any Chemicals used within the cabinet will have individual COSHH Risk Assessments . Decontamination and Aseptic Technique uses Chemgene ( CBE 334, MEME 654), IMS ( CBE 335, MEME 655) and Virkon ( CBE 336 MEME 656)	X

Spill and accident procedures.	+
Please see SOP038 for full Details. All spills within BSC must be cleaned up immediately. This includes lifting the grills to remove any spill which has dripped underneath.The BSC must be kept running for 30 minutes to clear any aerosols. In the event of an accident follow the University Procedures and report through online system. Inform Laboratory manager. Seek First Aid if required.	X

Procedure in the event of an emergency. (How to leave the process in a safe condition in such an event)	+
Leave experiment capping any tubes where possible . Leave the BSC running. In the event of a fire alert the fire brigade to any hazards. If BSC is switched off depending on the emergency ensure that the BSC is switched on for 30 minutes and left to run prior to work commencing.	X

References.	+
SOP038, SOP105, COSHH for Chemgene ( CBE 334, MEME 654), IMS ( CBE 335, MEME 655) and Virkon ( CBE 336 MEME 656)	X

## Detailed sequential description of the process

Process step	Precautionary measures and comments	
Please refer to SOP105	Put on lab coat and gloves.	X
Switch on BSC. Check for any alarms or faults indicated on display panel		X
Switch on the UV light by pressing the "UV" key (180 minutes UV exposure) or "UVTimer" (pre-set at 30 minutes) and press the "arrow" keys to adjust the time or "SET" to confirm - - The BSC should be sterilised by UV light exposure for 30 minutes once a day in the morning before use, or between handling of different biological materials or reagents.	Wear PPE. Ensure you do not touch the enclosed UV strip.	X

## Safety Method Statement (Continued)

Process step	Precautionary measures and comments	+
<p>Once the UV cycle has finished remove the front closure panel carefully by turning handles on each side. Place the panel in a secure vertical position at the side of the BSC.</p> <p>Turn on the main switch. The "lighting" shaped button should light blue.</p> <p>Enter the password to switch on the cabinet. At first the display shows "CHECK PANEL" and the corresponding control LEDs of the keyboard light up. Then the message "STAND-BY" is displayed for about 40 seconds and the hour-counter starts operating.</p> <p>(Ensure that the viewing window is in the work standard position (200mm). If not, press the arrow button to adjust the height of the sash window. CAUTION: DO NOT press the red button and the arrow button together since this will fully close or fully open the sash window</p> <p>Ensure that the airflow and balance indicators are within the operating range indicated, and that the blowback valve on the exhaust pipe is operating. Check the velocity of airflow. LAF (Laminar airflow) velocity must be within the range of 0.25 to 0.5m/sec and BARR (air barrier) velocity must be <math>\geq 0.4</math>m/sec. The green LED should light up when the ventilation works correctly. Do not use if in any doubt about cabinet performance.</p> <p>Record the information in the daily use log.</p>		+
<p>If all parameters in range the BSC is ready to use. See SOP105 for disinfection procedures and how to work aseptically within the BSC.</p>		X
<p>When work has finished ensure items are removed from the BSC and the BSC is cleaned as detailed in SOP105.</p>		X
<p>(Leave the fans running for 15-20 minutes before switching BSC OFF mode to allow removal of remaining aerosols.</p> <p>Turn off the light by pushing the blue key. Press 1/0 key switch and enter the password for switching off the cabinet.</p> <p>Replace the front panel by securing in place at both sides with handles.</p> <p>Activate the UV disinfection routine if required.</p>		X

## 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/MM/6505

Method Statement

SAF/MM/6505

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:

13/07/2021

Review comments