

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 **[X]** 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	Maria Pavlidou; Sotiria Toumpaniari
email address	m.pavlidou@lboro.ac.uk; s.toumpaniari@lboro.ac.uk
Location	H27, H29, H30
Project / Activity / Task	Live/Dead staining
Supervisor Name	Prof. Sotiris Korossis

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 lables current		+
Category 2: Workplace				
Slips/Trips/Falls on the level				+
Category 3: Hazardous and/or Harmful substances				
Suspected cancer causing substances				+
exposure to Covid-19				+
Category 4: Work activity				
Lone working out of hours				+
Category 5: Work organisation				
N/A				+

Explain the risks associated with these hazards				
People / Groups at risk	<input type="text" value="Operator only"/>			+
Enter risk details here:-	Impact	Probability	Risk Score	
<input type="text" value="Electrical shock from using BSC and microscope"/>	<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="Equipment has bi-annual PAT testing and visual checking of cables and connectors prior to use"/> <input type="text" value="Operator trained in the use of equipment"/>	<input type="text" value="Significantly"/>	<input type="text" value="Significantly"/>	+	
			Residual Risk	
			<input type="text" value="Low"/>	
People / Groups at risk	<input type="text" value="Operator and people in proximity"/>			+
Enter risk details here:-	Impact	Probability	Risk Score	
<input type="text" value="Exposure of suspected cancer causing substance"/>	<input type="text" value="Very Harmful"/>	<input type="text" value="Unlikely"/>	High	
What are the control measures?	Lowers Impact	Lowers Probability	+	

Process Risk Assessment Form (Continued)

A COSHH Risk Assessment will be done for each hazardous chemical and preventative action identified. Operator will be aware of hazards and will use substances accordingly and adhere to CBE SOP (see references - Method statement)	Significantly	Significantly	X	
Laboratory users will wear appropriate PPE as identified in the risk assessment.	Significantly	Significantly	X	
Use reagent in biological safety cabinet.	Significantly	Significantly	X	
			Residual Risk	
			Low	
People / Groups at risk	Operator and people in proximity			X
Enter risk details here:-	Impact	Probability	Risk Score	
Slips trips and falls	Slightly Harmful	Highly Unlikely		
What are the control measures?	Lowers Impact	Lowers Probability	+	
Laboratory users are trained on how to work with chemicals safely including dealing with spills.	None	None	X	
			Residual Risk	
People / Groups at risk	Operator and people in proximity			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 rules. Frequent washing (20 seconds minimum)/ sanitizing of hands to be carried out. Distancing should be 2 metre, but 1M+ is allowed where all concerned are wearing face coverings and this cannot be avoided Check local Covid tier rating Ventilate enclosed areas	None	Moderately	X	
			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	1	0	0	0	0	1
Research Staff (PDRA)	0	1	0	0	0	0	1
Research Students (PhD)	0	1	0	0	0	0	1

Process Risk Assessment Form (Continued)

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
Students (Undergraduate / MSc)	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0
Others - Over-type as needed	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	3

With these controls in place, the risk is:

The activity is LOW RISK - and is effectively controlled

Safety Method Statement

Reference SAF/MEME/6807

Location H27, H29, H30

Originator Maria Pavlidou; Sotiria Toumpaniari

Project / Activity / Task Live/Dead staining

What equipment will be used in this activity?	+
Fluorescent microscope (Nikon Eclipse Ti Series)	X
Pipettes	X
Pipette tips	X
24 well plates	X
Biological Safety Cabinet	X

What training must be completed to do this activity?	+
Cell culture	X
Aseptic technique	X
Use of fluorescent microscope	X

What chemicals are being used? (These must be included in the COSHH Form)	+
Calcein AM in anhydrous DMSO	X
Ethidium homodimer-1(2mM solution) in DMSO/H2O 1:4 (v/v)	X
Dulbecco's Phosphate-Buffered Saline (DPBS)	X
	X

Spill and accident procedures.	+
In case of contact with eyes, remove contact lenses, if present and easy to do and immediately flush eyes with copious amounts of water for several minutes. In case of contact with skin, immediately wash skin with soap and copious amounts of water.	X
Absorb the spillage using clean paper towels and dispose of the paper towels in a cytotoxic waste bag. Place the used towels and gloves in the cytotoxic waste bag.	X

Procedure in the event of an emergency. (How to leave the process in a safe condition in such an event)	+
Leave note with a name of the operator and date mentioning not to move anything from the area and dispose contaminated gloves. If alarm sounds evacuate area	X

References.	+
CBE code of practice, SOP009, SOP072, SOPSOP037, SOP038, SOP039	X

Detailed sequential description of the process

Process step	Precautionary measures and comments	+
		+

Safety Method Statement (Continued)

Process step	Precautionary measures and comments	+
In a BSC, prepare 10 mL of an approximately 2 μ M calcein AM and 4 μ M EthD-1 solution. More specifically, add 20 μ L of the supplied 2 mM EthD-1 stock solution to 10 mL of sterile, tissue culture–grade DPBS and 5 μ L of the supplied 4 mM calcein AM stock solution to the 10 mL EthD-1 solution.	Wear nitrile gloves and a lab coat.	X
In a BSC, transfer well plates with samples and wash with PBS. Aspirate PBS after wash.	Use aspirator.	X
Add working solution to cover the cell culture samples.	Cover samples with aluminum foil as soon as the working solution is added.	X
Incubate in the dark at RT for 20-25 min	Leave the samples that have been covered with aluminum foil on the bench and leave a note with the operator name, date and assay, so they will not be discarded.	X
Observe well plates under fluorescent microscope.	Work in the dark to protect the fluorescent dyes from bleaching.	X


COSHH Form

Reference

Location

Originator

Project / Activity / Task

CHEMICAL NAME						Hazard Rating High		OVERALL RISK: Low		
Dimethyl sulfoxide (95-100% w/v) / 5,5-						Exposure Potential Low				
CAS No.	<input type="text" value="67-68-5 / 61926-22-5"/>	Amount used	<input type="text" value="0.2"/> <input type="text" value="ml"/>	Period of use (hrs)	<input type="text" value="1"/>	The process is:	<input type="text" value="Semi Closed"/>	Physical State	<input type="text" value="Non-Volatile Liquid"/>	<input type="checkbox"/> Eyes <input type="checkbox"/> Skin <input type="checkbox"/> Inhaled <input type="checkbox"/> Ingested
W.E.L. (Itel / stel)	<input type="text"/>									

This chemical has a high health risk associated with it.

Hazard Statement and Description	Precaution Statement and Description	
<input type="text" value="H351 Suspected of causing cancer."/>	<input type="text" value="P201 Obtain special instructions before use."/>	X
<input type="text"/>	<input type="text" value="P280 Wear protective gloves/protective clothing/eye protection/face protection."/>	X
<input type="text"/>	<input type="text" value="P202 Do not handle until all safety precautions have been read and understood."/>	X
<input type="text"/>	<input type="text" value="P308 + P313 IF exposed or concerned: Get medical advice/attention."/>	X
<input type="text"/>	<input type="text" value="P501 Dispose of contents/container to ..."/>	X
Justify the use of this chemical:	Ethidium homodimer-1 is a membrane permeable fluorescent dye that helps identification of dead cells. Dead cells stained with Ethidium homodimer-1 are observed with red color under a fluorescent microscope. Therefore, dead cells can be distinguished from living cells, which will be stained with Calcein AM (green fluorescent dye).	
How will the precautions listed above be implemented?		
<input type="text" value="Wear PPE (lab coat, nitrile gloves, goggles, shoe covers, long trousers and closed shoes). Treat waste as cytotoxic."/>		
Special Storage and Containment Measures	Disposal Method	
<input type="text" value="Store at ≤-20°C and protect from light."/>	<input type="text" value="Collection in waste bottle for Live/Dead staining and when it is full, it is going to be discarded as cytotoxic waste in pod 1."/>	X
How will spillages be dealt with?	<i>Please note: any material used to clean up a spill of hazardous material must also be disposed of as hazardous material. Click here to see spill procedures</i>	
<input type="text" value="Absorbent cloth / tissue and then, discard in cytotoxic waste."/>		

[+ Add another chemical](#)

Statement of work (Process to be undertaken)

Show Image

Personal protection requirements not covered in the precaution statements above.

Sources of information and references

Reference to **existing approved** Risk Assessment

COSHH Form (Continued)

https://www.thermofisher.com/document-connect/document-connect.html?url=https%3A%2F%2Fassets.thermofisher.com%2FTFS-Assets%2FLSG%2FSDS%2FL3224COMPONENTA_MTR-EULT_BE.pdf&title=TDMyMjRDT01QT05FTIRB

https://www.thermofisher.com/document-connect/document-connect.html?url=https%3A%2F%2Fassets.thermofisher.com%2FTFS-Assets%2FLSG%2FSDS%2FL3224COMPONENTB_MTR-EULT_BE.pdf&title=TDMyMjRDT01QT05FTIRC

With the current controls, the risk of using these chemicals is: Low

Supervisor to check that the process involving the safe use of these chemicals has been satisfactorily evaluated

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/6807

Method Statement

SAF/MEME/6807

COSHH Assessment

SAF/MEME/1040

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:

21 May 2022

Review comments