

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	Carolyn Kavanagh
email address	c.l.kavanagh@lboro.ac.uk
Location	All Labs in Centre for Biological Engineering and T208b Wolfson School
Project / Activity / Task	Use and Maintenance of Water Baths
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	+
Localised hot surfaces	X
Hot/cold ambient temperature	X
Electrical Hazard	X
Category 2: Hazardous and/or Harmful substances	+
Biological substances (Infection)	X
Irritant substances	X
Category 3: Activity	+
Lone working out of hours	X
Awkward/Heavy lifting/Handling	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 burns from heating element /hot water"/>	<input type="text" value="Harmful"/>	<input type="text" value="Unlikely"/>	Medium
What are the control measures?	Lowens Impact	Lowens Probability	+
<input type="text" value="Operators trained how to maintain and operate water baths safely"/>	<input type="text" value="Significantly"/>	<input type="text" value="Significantly"/>	X
<input type="text" value="Operators wear gloves and safety glasses to place items and remove items from the water bath"/>	<input type="text" value="Moderately"/>	<input type="text" value="Moderately"/>	X
<input type="text" value="Water baths set to 37c for most applications. Certain water baths can be set at a higher temperature but must submit an additional risk assessment for individual projects which require this as the risk is greater. However, if the temperature was to be increased the individual would need to liaise with the lab manager and the other users of the water bath and place signage on the equipment indicating the danger. They would also require heat resistant gloves to remove the vials and wear safety glasses when removing vials. The water bath would be returned to 37c once the experiment had been completed."/>	<input type="text" value="Moderately"/>	<input type="text" value="Moderately"/>	X

Process Risk Assessment Form (Continued)

Operators are trained to lift the lid of the water bath up cautiously while wearing gloves and safety glasses in case the lid is hot. There is a secure handle on the lid.	Moderately	Moderately	X	
			Residual Risk	
			Low	
People / Groups at risk	Operator and people in proximity			X
Enter risk details here:-	Impact	Probability	Risk Score	
Fire risk from faulty electrics/electrical shock	Very Harmful	Highly Unlikely	Medium	
What are the control measures?	Lowers Impact	Lowers Probability	+	
Water baths PAT tested regularly and checked for faulty leads	Significantly	Significantly	X	
Leads/Water baths disposed of and replaced if leads/part of water bath become damaged	Moderately	Moderately	X	
Water bath switched off before maintenance performed and operators are careful not to let water get into electrics.	Moderately	Moderately	X	
			Residual Risk	
			Low	
People / Groups at risk	Operator only			X
Enter risk details here:-	Impact	Probability	Risk Score	
Risk of infection from infectious material	Harmful	Highly Unlikely	Low	
What are the control measures?	Lowers Impact	Lowers Probability	+	
All items placed in water baths are securely contained in vials so no material can escape. Vials are contained within racks.	Significantly	Significantly	X	
Vials are regularly wiped down with chemgene as part of cell culture process	Moderately	Moderately	X	
Water baths are regularly cleaned and Aqua Stabil / Julabo cleaning agent added to minimise bacterial and fungal growth	Significantly	Significantly	X	
Any spills are dealt with immediately following instructions in SOP038 Biological spill response	Moderately	Moderately	X	
Operators wear gloves when handling vials. PPE at all times for above	None	None	X	
			Residual Risk	
			Low	
People / Groups at risk	Operator only			X
Enter risk details here:-	Impact	Probability	Risk Score	
Skin irritation from Aqua Stabil cleaning agent	Harmful	Highly Unlikely	Low	
What are the control measures?	Lowers Impact	Lowers Probability	+	
Operators wear gloves at all times to prevent skin coming into contact with Aqua Stabil cleaning agent.	Significantly	Significantly	X	
Operators are familiar with hazards of Aqua Stabil / Julabo cleaning agents and are trained how to handle safely	Moderately	Moderately	X	

Process Risk Assessment Form (Continued)

Aqua Stabil used at very dilute concentrations. PPE for all above		Significantly	Significantly	X		
				Residual Risk		
				Low		
People / Groups at risk		Operator only			X	
Enter risk details here:-		Impact	Probability	Risk Score		
Awkward handling when emptying water		Harmful	Likely	High		
What are the control measures?		Lowers Impact	Lowers Probability	+		
Operators trained how to empty water safely, removing as much water as possible with pump or beaker before tipping water bath to remove remainder. The water is only removed when it has cooled to room temperature.		Significantly	Significantly	X		
Water baths are located near to sinks (with careful consideration of plugs) so there is no lifting involved of the equipment only a tipping motion.		Moderately	Moderately	X		
				Residual Risk		
				Low		
People / Groups at risk		Operator only			X	
Enter risk details here:-		Impact	Probability	Risk Score		
Lone working using water baths		Harmful	Likely	High		
What are the control measures?		Lowers Impact	Lowers Probability	+		
All operators are fully trained before being permitted to work out of hours. Use lone working app, instructions available at the University H&S site. Ensure supervisor and colleague are aware that you are lone working. Keep mobile phone at hand at all times.		Significantly	Significantly	X		
				Residual Risk		
				Low		
People / Groups at risk		Operator only			X	
Enter risk details here:-		Impact	Probability	Risk Score		
Vapours from material which has been heated		Harmful	Highly Unlikely	Low		
What are the control measures?		Lowers Impact	Lowers Probability	+		
Operators are trained not to place dangerous material which could vaporise when heated in the water bath.		Moderately	Moderately	X		
Individual risk assessments for the material they are using would highlight it should not be heated.		Moderately	Moderately	X		
Operators are trained to wear PPE when using the water baths		Moderately	Moderately	X		
				Residual Risk		
				Low		
+ Add another Risk						

With these controls in place, the risk is:

Process Risk Assessment Form (Continued)

The activity is LOW RISK - and is effectively controlled

Safety Method Statement

Reference SAF/MM/6503

Location All Labs in Centre for Biological Engineering and T208b Originator Carolyn Kavanagh

Project / Activity / Task Use and Maintenance of Water Baths

What equipment will be used in this activity?

	+
18L Grant Water Bath in H23	X
26L Grant Sub Aqua Water Bath H22	X
26L Grant Sub Aqua pro water bath H27	X
Fisherbrand Water Bath H25	X
Racks	X
Pump/beaker for removing water	X
12L Grant Sub aqua Water Bath H29	X
Clifton Water Bath T208b	X
High Temperature Water Bath in H34	X
2l Grant sub aqua water bath in H34	X
Deionised water	X

What training must be completed to do this activity?

	+
CBE Laboratory safety Induction training	X
Laboratory Leader Induction Training which includes how to maintain water baths	X

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

	+
Julabo Aqua Stabil	X
Chemgene - please refer to COSHH CBE 334 MEME 654	X

Spill and accident procedures.

	+
Dilute Aqua Stabil will be cleaned up with mop and bucket and mop and floor rinsed with water after. Concentrated Aqua Stabil will be cleaned up using chemical spill kit and placed in yellow bags for incineration. SOP038 Spill Response offers guidance on how to deal with spills. Any accidents must be reported through the University accident reporting procedures.	X
If spillage is on lab coat or skin - remove lab coat and wash skin with soap and warm water. Safety glasses should be worn when handling Aqua Stabil but if any gets in the eyes use eye wash to flush the eyes. If ingested seek medical attention.	X

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

	+
Ensure lid is securely in place on water bath before leaving it unattended. Inform lab managers and evacuate area, only returning when it is declared safe to do so	X

References.

	+
SOP020, SOP038, Chemgene COSHH CBE 334 MEME654	X

Detailed sequential description of the process

Process step	Precautionary measures and comments	+
		+

Safety Method Statement (Continued)

Process step	Precautionary measures and comments	+
Lift the lid of the water bath and check water for any signs of contamination. If contamination is found do not use until it has been decontaminated.	Check for any faults with leads or water bath. Always wear gloves.	X
Place vials into racks inside water baths and replace lid. When the item has defrosted/warmed remove lid and retrieve vial. Replace lid on water bath.	Ensure vials are securely sealed. Do not touch any hot surfaces. Vials should be externally wiped with chemgene before being placed in the rack.	X
When water bath requires cleaning - Switch off at the wall. Allow water to cool to room temperature. Remove all racking from the water bath and thoroughly clean with disinfectant. Use a pump or beaker to scoop out water into the sink. Maneuver the water bath close to the sink (do not lift) and gently tip out the remaining water into the sink. Clean out the bottom and sides of the water bath with chemgene . Add fresh de-ionised water and add Aqua Stabil cleaning agent as directed by manufacturer and SOP020. Place the racks back into the water bath and switch back on allowing it to reach 37c before use.	Wear gloves and safety glasses while cleaning the water bath.	X

COSHH Form

Reference

Location

Originator

Project / Activity / Task

CHEMICAL NAME				Hazard Rating		Low		<div style="border: 1px solid black; padding: 5px; display: inline-block;"> X OVERALL RISK: Low </div>		
<input type="text" value="Julabo Aqua Stabil"/>				Exposure Potential		Low				
CAS No.	<input type="text" value="27083-27-8"/>	Amount used	<input type="text" value="50"/> <input type="text" value="ml"/>	Period of use (hrs)	<input type="text" value="24"/>	The process is:	<input type="text" value="Open"/>		Physical State	<input type="text" value="Non-Volatile Liquid"/>
W.E.L. (Itel / stel)	<input type="text" value="N/A"/>									

Hazard Statement and Description	Precaution Statement and Description	
<input type="text" value="H412 Harmful to aquatic life with long lasting effects."/>	<input type="text" value="P273 Avoid release to the environment."/>	X
<input type="text"/>	<input type="text" value="P501 Dispose of contents/container in accordance with local regulations."/>	X
<p>How will the precautions listed above be implemented?</p> <p>Aqua Stabil is added to water baths at 2ml per Litre of water. This makes a very dilute solution when disposed of to the drain. Concentrated aqua stabil would never be disposed of down the drains and would be disposed of through University Chemical waste disposal procedures.</p>		
Special Storage and Containment Measures	Disposal Method	
<input type="text" value="A 500ml bottle is stored under the sink in each cell culture laboratory (H22, H23, H25, H27, H29 and T208b Wolfson School). Any additional stock is held in a box in the first change of the CBE or in the bulk store room in original packaging."/>	<input type="text" value="Aqua Stabil is used in such low concentrations (diluted in deionised water 2ml of Aqual Stabil to 1L of water) that it can be tipped down the sink when the water bath is cleaned. If the concentrated bottle of Aqua Stabil needs to be disposed of this will be done through the University chemical waste disposal procedures."/>	X
<input type="text" value="How will spillages be dealt with?"/>	<p><i>Please note: any material used to clean up a spill of hazardous material must also be disposed of as hazardous material.</i> Click here to see spill procedures</p>	
<p>Dilute Aqua Stabil will be mopped up with mop and bucket and disposed of down the drain. The floor and mop will be rinsed with clean water.</p> <p>Concentrated Aqua Stabil will be cleaned up using a chemical spill kit and placed in yellow bags for incineration.</p>		

[+ Add another chemical](#)

Statement of work (Process to be undertaken)

On a regular basis (depending on usage of water bath or signs of contamination) the laboratory users will clean out the water baths as part of housekeeping duties. Once water baths have been cleaned out deionised water is used to fill up the water bath. Aqua stabil is added in small quantities to the water using a sterile pipette tip. 2ml of Aqua stabil is added to every Litre of water. This very dilute concentration can be disposed of down the sink when the water bath requires cleaning again.



Personal protection requirements not covered in the precaution statements above.

Operators will wear laboratory coats, shoe covers, gloves and safety glasses when handling Aqua Stabil. If spillage is on lab coat or skin - remove lab coat and wash skin with soap and warm water. Safety glasses should be worn when handling Aqua Stabil but if any gets in the eyes use eye wash to flush the eyes. If ingested seek medical attention.

Sources of information and references

Reference to **existing approved** Risk Assessment

COSHH Form (Continued)

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/MM/6503

Method Statement

SAF/MM/6503

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:

24 Jul 2021

Review comments