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	
Originator name	Hugo Bell
email address	H.Bell@lboro.ac.uk
Location	H27 Centre of Biological engineering
Project / Activity / Task	Compatibility of Ti-based Scaffolds
Supervisor Name	Carmen Torres Sanchez

Version : 2.19

Loughborough University

Risk Assessment

Reference

Location: H27 Centre of Biological engineering

Originator: Hugo Bell

Project / Activity / Task: Compatibility of Ti-based Scaffolds

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	N/A	x

Category 2: Workplace +

x

Category 3: Hazardous and/or Harmful substances +

Toxic substances x

x

Sensitising substances x

Category 4: Work activity +

x

Category 5: Work organisation +

N/A x

Explain the risks associated with these hazards

People / Groups at risk: Operator and people in proximity — x

Enter risk details here:-	Impact	Probability	Risk Score
Inhalation	Harmful	Unlikely	Medium

What are the control measures?	Lowers Impact	Lowers Probability	+
If inhaled, immediately move either yourself, or person of interest into fresh air. Ensure the containing bottle is opened and closed under the fume hood cupboard. Prepare small aliquots of this chemical at diluted concentrations of 4% in H2O.	Significantly	Significantly	x

Residual Risk: Low

People / Groups at risk: Operator only — x

Enter risk details here:-	Impact	Probability	Risk Score
Skin and Eye Contact	Harmful	Highly Unlikely	Low

Process Risk Assessment Form (Continued)

What are the control measures?	Lowers Impact	Lowers Probability	+
Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab Gloves. Prepare small aliquots of this chemical at diluted concentrations of 4% in H20. In case of skin contact, remove contaminated PPE immediately. Wash off with soap and plenty of water. Take victim (either operator or people in proximity) to the hospital and consult a physician. In case of eye contact, rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if irritation continues.	Significantly	Significantly	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	1	0	0	0	1
Technical Staff	0	0	0	1	0	0	1
Research Staff (PDRA)	0	0	0	0	0	0	0
Research Students (PhD)	2	0	0	0	0	0	2
Students (Undergraduate / MSc)	0	0	0	0	0	1	1
Visitors	0	0	0	0	0	1	1
Others - Over-type as needed	0	0	0	0	0	0	0
Total	2	0	1	1	0	2	6

With these controls in place, the risk is:

The activity is LOW RISK - and is effectively controlled

Safety Method Statement

Reference

Location: H27 Centre of Biological engineering

Originator: Hugo Bell

Project / Activity / Task: Compatibility of Ti-based Scaffolds

What equipment will be used in this activity?

Pipette (and tips), and Deionized water

What training must be completed to do this activity?

CBE Training (Completed)

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

Glutaraldehyde Solution

Spill and accident procedures.

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable closed container for disposal. As detailed in SOP039.

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

Seal both the stock solutions (25%) and working solutions (4%) of Glutaraldehyde, within their respective containers. Leave the fume hood extraction turned on.

References.

SOP039 and SDS

Detailed sequential description of the process

Process step	Precautionary measures and comments
Prior to SEM analysis, Cells cultured on scaffolds are set in a 24/48 multi-well plate and washed with PBS. After this step, 500mL of 4% gluteraldheyde solution is added to each well.	Work is to be carried out under the chemical fume hood. Dispose the tips in the purple plastic box for cytotoxic hazardous materials and seal it. Avoid spillages
Move the 24/48 multi-well plate in the fridge (4oC), leave overnight.	Seal the 24/48 multi-well plate with para-film and wrap it in aluminum foil . Label the plate with your initials and date. Also label with "DO NOT MOVE OR OPEN THIS PLATE. CONTAINS 4% GLUTARALDEHYDE SOLUTION". Thus informing people in proximity of the hazards involved with storage material

Loughborough University

COSHH Form

Reference

Location: H27 Centre of Biological engineering

Originator: Hugo Bell

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CHEMICAL NAME

Glutaraldehyde Solution

CAS No. 111-30-8

W.E.L. (Itel / stel) 0.05ppm / 0.2

Hazard Rating: High

OVERALL RISK: Medium

Amount used		Period of use (hrs)	The process is:	Physical State		Exposure Potential
0.04	l	0.5	Semi Closed	Non-Volatile Liquid	✓ Eyes ✓ Skin ✓ Inhaled ✓ Ingested	Low

This chemical has a high health risk associated with it.

Hazard Statement and Description	Precaution Statement and Description
H302 Harmful if swallowed.	P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
H314 Causes severe skin burns and eye damage.	P273 Avoid release to the environment.
H317 May cause an allergic skin reaction.	P280 Wear protective gloves/protective clothing/eye protection/face protection.
H332 Harmful if inhaled.	P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminate
H334 May cause allergy or asthma symptoms or breathing difficulties i	P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position com
H335 May cause respiratory irritation.	P310 Immediately call a POISON CENTER or doctor/physician.
H410 Very toxic to aquatic life with long lasting effects.	P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remov
	P391 Collect spillage.

Justify the use of this chemical: Glutaraldheyde is the only chemical which will ensure a complete fixation of biological samples. The quantity used is limited to 4% gluteraldheyde solution (diluted in H2O) and a small amount of this chemical is therefore used.

How will the precautions listed above be implemented?

Wear the correct PPE. Avoid breathing in vapour, mist or gas. Ensure adequate ventilation. Work under the Chemical Fume hood. Use small aliquots. Avoid spillages. Keep the work surface clean and organized.

Special Storage and Containment Measures	Disposal Method
Store in a cool place. Ensure the containers is tightly closed, and stable, in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.	Check with Technician / Supervisor. Non Halogenated Waste

How will spillages be dealt with?

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

Refer to SOP039 - Section 5.10 Dealing with Chemical Spills

+ Add another chemical

Statement of work (Process to be undertaken)

Show image

COSHH Form (Continued)

Personal protection requirements not covered in the precaution statements above.

Eye/Face Protection, Gloves, Lab coat, Respiratory protection.

Sources of information and references	Reference to **existing approved** Risk Assessment
SDS from Sigma Aldrich website (PDF enclosed)	

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

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: Dr Carmen Torres-Sánchez — Digitally signed by Dr Carmen Torres-Sánchez Date: 2020.01.06 11:50:29 Z

Form Reference Numbers

Risk Assessment	Method Statement	COSHH Assessment

DSO Signature: Oliver Preedy — Digitally signed by Oliver Preedy Date: 2020.07.28 13:28:08 +01'00'

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: 05/01/2021

Review comments