

Safety Documentation

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

1	Risk Asses	sment
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✓ Method Statemen

✓ Chemicals COSHH

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

<u>Buttons</u>: [+] 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 <u>MUST NOT</u> 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 / 1	Compatibility of Ti-based Scaffolds - Fixing Scaffolds with PFA 4%					
Supervisor Name	Dr Carmen Torres Sanchez					

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What are the control measures?



Risk Assessm	en	t				Reference	e		
Location	ocation H27 Centre of Biological Engineering Originator Hugo Bell								
Project / Activity / Task	Comp	atibility of Ti-based Scaffolds - F	ixing Sca	affolds w	vith PFA 4%				
Is this process risk as	ssessi	ment for a:	/ Worksł	hop	◯ General u	se			
Category 1: Machiner	y & w	ork equipment:							
Design and Constructi	on	Mechanical hazards	E	lectrical	hazards	Ra	diation haz	zards	+
N/A		N/A	N/A			N/A			x
Category 2: Workplac	:e								+
N/A									X
Category 3: Hazardou	ıs and	d/or Harmful substances							+
Cancer causing substance	es								X
Sensitising substances									x
Irritant substances									X
Category 4: Work acti	vity								+
N/A									X
Category 5: Work org	anisa	tion							+
N/A									x
Explain the risks asso	ciated	d with these hazards							
People / Groups at risk Operator and people in proximity									
Enter risk details here:-				Impact		Probabili	ty	Risk Score	
Inhalation and Ingestion Harmful Unlikely Medium						n			

Lowers Impact

Lowers Probability

Process Risk Assessment Form (Continued)

If not breathing, or if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If necessary, call a hospital or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Residual Risk Low People / Groups at risk Operator and people in proximity Enter risk details here:- Skin and Eye Contact What are the control measures? Lowers Impact Slightly Harmful Lowers Probability Highly Unlikely Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab					7	
People / Groups at risk Operator and people in proximity	into fresh air. Ensure the under the fume hood cu If ingested, immediately water afterwards. If not breathing, or if bre occurs, provide artificial It may be dangerous to the mouth resuscitation. Get feeling unwell. If necessary unconscious, place in recimmediately. Maintain a	containing bottle is opened and closed apboard. clean mouth with water, and drink plenty of eathing is irregular or if respiratory arrest respiration or oxygen by trained personnel. The person providing aid to give mouth-to-t medical attention following exposure or if eary, call a hospital or physician. If covery position and get medical attention nopen airway. Loosen tight clothing such as	Significantly	Significantly	x	
People / Groups at risk Operator and people in proximity X Enter risk details here:- Skin and Eye Contact Impact Highly Unlikely Highly Unlikely Highly Unlikely What are the control measures? Lowers Impact Lowers Probability + Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab Gloves. 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, immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for, and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a physician. Residual Risk					Resi	dual Risk
Enter risk details here: Skin and Eye Contact Impact Slightly Harmful Finghly Unlikely Lowers Impact Lowers Probability Lowers Probability Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab Gloves. 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, immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for, and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a physician. Residual Risk					4	Low
Skin and Eye Contact Slightly Harmful Highly Unlikely Lowers Impact Lowers Probability Lowers Probability Highly Unlikely Lowers Probability Lowers Probability Lowers Probability Highly Unlikely Lowers Probability Significantly Significantly Significantly Significantly Residual Risk	People / Groups at risk	Operator and people in proximity				x
What are the control measures? Lowers Impact Lowers Probability Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab Gloves. 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, immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for, and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a physician. Residual Risk	Enter risk details here:-		Impact	Probability	Risk S	core
Ensure the correct PPE is worn: Lab-coat, Goggles, Shoe Covers, Lab Gloves. 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, immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for, and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a physician. Residual Risk	Skin and Eye Contact		Slightly Harmful	Highly Unlikely		
Gloves. 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, immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for, and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a physician. Residual Risk	What are the control measures	?	Lowers Impact	Lowers Probability	y +	
	In case of skin contact, re off with soap and plenty people in proximity) to the case of eye contact, in occasionally lifting the uremove any contact lense det medical attention for	emove contaminated PPE immediately. Wash of water. Take victim (either operator or he hospital and consult a physician. Inmediately flush eyes with plenty of water, pper and lower eyelids. Check for, and ses. Continue to rinse for at least 15 minutes.	Significantly	Significantly	x	
Low					Resi	<u>I</u> dual Risk
						Low

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

Personnel Group	Maximum (Task setup/ Reconfiguration)	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	1	0	0	0	1
Research Students (PhD)	2	0	0	0	0	0	2
Students (Undergraduate / MSc)	0	0	0	0	0	1	1

+ Add another Risk

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
Visitors	0	0	0	0	0	1	1
Others - Over-type as needed	0	0	0	0	0	0	0
Total	2	0	2	1	0	2	7

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 - Fixing Scaffolds	with PFA 4%	
What equipment wil	I be used in this activity?		+
Pipette (and tips), PBS			X
What training must b	pe completed to do this activity?		+
CBE Training (Completed	d)		X
What chemicals are I	being used? (These must be included in the	COSHH Form)	+
Paraformaldehyde			X
Spill and accident pr			+
	bent material and dispose of as hazardous waste. Kee nove from all sources of ignition	ep in suitable closed container for disposal. As	X
Procedure in the eve	ent of an emergency. (How to leave the process in	n a safe condition in such an event)	+
Seal container and leave been used.	in the fume hood, with the extraction turned on. Lab	el clearly any working solutions that have	x
2.6			
References.			+
SOP039 and SDS			X

Detailed sequential description of the process

Process step	Precautionary measures and comments	+
Prior to IHC analysis, Cells cultured on scaffolds are set in a 24/48 multi-well plate and washed with PBS. After this step, 500mL of 4% paraformaldehyde 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	X
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% PFA SOLUTION". Thus informing people in proximity of the hazards involved with storage material	X



COSHH For	m				Reference				
Location	H27 Cent	re of Biological Engineerir	ng		Originator	Hugo Bell			
Project / Activity / Task	Compati	bility of Ti-based Scaffolds	s - Fixing Scaffo	lds wi	th PFA 4%				
CUERALCAL NAME							Harrand		
PFA Solution					♦		Hazard Rating High	OVERAL	X LL
CAS No. 30525-89-4		Amount Period of used use (hrs)	The process is:	Physic	al State	✓ Eyes ✓ Skin	Exposure Potential	RISK:	_
W.E.L. (Itel / stel)		g	Semi Closed	Non-V	olatile Liquid	Inhaled Ingested	Low	Low	
This chemical has a high he	ealth risk assoc	ciated with it.							
Hazard St	atement a	nd Description		Pred	caution Statem	ent and Desc	cription		+
H351 Suspected of causin	ng cancer.		P201 Obtain spe	cial inst	ructions before us	e.			X
H317 May cause an allerg	jic skin reactio	on.	P202 Do not han	ıdle unt	il all safety precau	tions have been	read and unde	erstood.	x
H318 Causes serious eye	damage.		P281 Use person	al prote	ective equipment	as required.			X
			P280 Wear prote	ctive gl	loves/protective cl	othing/eye prot	tection/face pro	otection.	x
			P261 Avoid brea	thing d	ust/fume/gas/mist	t/vapours/spray	'.		x
			P264 Wash hand	ls thoro	ughly after handli	ng.			x
			P272 Contamina	ted wo	rk clothing should	not be allowed	out of the wor	kplace.	x
			P308 + P313 IF e	xposed	or concerned: Get	medical advice	e/attention.		x
			P302 + P352 IF C	N SKIN	: Wash with plenty	of soap and wa	iter.		x
			P363 Wash conta	aminate	ed clothing before	reuse.			X
			P332 + P313 If sk	in irrita	tion occurs: Get m	edical advice/at	ttention.		X
			P305 + P351 + P3	338 IF II	N EYES: Rinse cauti	ously with wate	er for several m	inutes. Remov	X
			P338 Remove co	ntact le	enses, if present an	d easy to do. Co	ontinue rinsing.	,	X
			P310 Immediate	ly call a	POISON CENTER o	or doctor/physic	ian.		X
Justify the use of this ch	emical:		biological san used is limited	nples t d to 49	mical which wil for immunohis % PFA solution mical is therefo	tochemcial a (diluted in P	nalysis. The	quantity	
-		above be implemented?							
		eathing in vapour, mist or o spillages. Keep the work				ork under th	e Chemical	Fume	
Special Storage and	l Containm	ent Measures			Disposa	l Method			+
	a dry and be opened m	well-ventilated place. nust be carefully resealed		mL fal	ian / Supervisc con), labeled c	•		•	x

COSHH Form (Continued)

	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 Spil	ills						
	+ Add another chemical							
(Statement of work (Process to be undertaken)							
F	Fixation of Biological Samples	Show Image						
P	Personal protection requirements not covered in the precau	aution statements above.						
E	ye/Face Protection, Gloves, Lab Coat							
S	ources of information and references	Reference to <u>existing approved</u> Risk Assessment						
S	DS from ThermoFisher website (PDF enclosed)							
	With the current controls, the risk of using these	se 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 doo	cument to the originato	or		
	form, but click the "Not	SE THE FORMS, Approved" check-box and return it em to do to put it right in the comm		Not Approved
Supervisors Signature				
	[Form Reference Numbers		
Risk Assessment		Method Statement	COSHH Assessme	nt
DSO Signature				
This document set ment 1) After the first occurrence 2) After any change to the 3) After any incident result 4) At least annually from the	e of the activity describ procedure or reagents ting from this activity		ving times: Next Review:	14/02/2021
Review comments	ie date of approval			

Hugo Bell 28-Jul-2020 Page 7 of 7