Birmingham River Champions risk assessment

BRC techniques involved	Hazard	Risk	Control measures
Within-river sampling: Urban Riverfly / water chemistry	Water safety issues, including: Immersion / drowning Sudden immersion / shock Foot entrapment Hypothermia Cuts / puncture wounds	• Deep waters, fast flows and an uneven riverbed. • Silt and mud / marshy ground. • Impact from floating debris. • Unexpected sudden increase in flow (e.g., rapid river response to rainfall, or upstream dam releases). • Murky water preventing dangerous objects on riverbed being visible (e.g., needs, broken glass).	• Never practice lone working while monitoring • Do not access any waters with depths above welly height (approximately 40cm). • Check the riverbed depths and type of sediment using the kick net base (or a staff / wading pole). • Check the weather forecast and river levels (if applicable) and abandon monitoring if heavy rainfall or flood conditions are occurring or expected. • Abandon monitoring if water levels begin rising rapidly and become notably more murky. • Wear appropriate, waterproof clothing based on weather conditions.
	Slips, trips and falls into the water	• Kicking or walking within the channel. • Accessing or exiting the water.	• Check that riverbed sediments underfoot are stable using the kick net base (or a staff / wading pole). • Beware of and avoid 'slimy' substrate (e.g., rocks covered in wet algae / mosses). • Wear waterproof footwear with suitable underfoot grip. • Only access waters below welly height (approximately 40cm).

Email - birminghamriverchampions@gmail.com;
Website - https://birminghamriverchampions.shinyapps.io/BirminghamRiverChampions
@brumriverchamps

	Exposure to toxic chemicals	• The Freshwater Watch kits measuring nitrate and phosphate tubes contain a strong acid substance, while the reagents in the Hanna Ammonia checker are highly toxic and corrosive. Both are contained securely within appropriate containers and the techniques allow the solutions to be used very easily.	• Do not allow any individual who has not participated in the relevant training to use the product and store out of reach from children / animals. • Wear the eye goggles and gloves provided when sampling and take extra caution to ensure these toxins remain within the parameters of the respective sampling procedure. • Dispose of the sample biproducts down a sink. For the nitrate / phosphate tubes, squeeze the solution out in its entirety and then recycle the drained tube. For the ammonia, empty the vial and then rinse with tap water. Rinse and wipe down the sink surface after the solutions have been disposed of. • If any contact occurs with eyes and skin, or enters the mouth, rinse and wash the areas thoroughly with plenty of clean water. Seek medical advice immediately if an adverse reaction occurs or if any substances are ingested. • Read the supplier's safety data sheets for the ammonia (Hanna instruments), nitrate and phosphate test kits for further information.
	Risk to the environment	• Disturbance of silt / mud (downstream pollution). • Spread of infection / invasive species between watercourses. • Distress to fish (e.g., spawning sites) and other aquatic wildlife.	• Aim to place feet on stable, coarse substrates once in the river. • Ensure footwear is completely dry after exiting a river before entering another. Switch surveyors entering different rivers. Failing this, ensure footwear if disinfected. • Do not leave any litter in the river. Avoid disturbing salmonid nests called 'redds' (read here for further information).

	Muscular skeletal disorder	• Repetitive kick sampling. • Manual handling / lifting. • Posture.	• Awareness of posture, correct lifting techniques and back care.
All: Urban Riverfly / water chemistry / Urban Outfall Safari / bankside invasive species spotting	Person	• Lack of individual capability. • Poor fitness. • Pre-existing injuries.	• Reading, understanding and implementing the health and safety information reported in this document • Pre-existing injuries can be exacerbated by the activity. If the effects are felt post monitoring, seek quick medical advice / treatment (delay can significantly hinder recovery)
	Bites / stings/ irritants	• Bites / string / irritants from nature.	• Beware of and avoid potentially harmful flora– particularly giant hogweed along riverbanks (its sap can cause nasty burns), and any other toxic plants. • Beware of and where possible avoid potentially harmful fauna like biting midges, bees and wasps. • Wear insect repellent and carry appropriate treatment where necessary (e.g., antihistamines, epinephrine / adrenaline autoinjectors for those with allergies). • Wear long and relatively tight (i.e., not loose) clothing. • Have a mobile phone on your person to call for help (dial 999 if necessary).
	Exposure to disease and infections. Some specifics include: Leptospirosis (Weil's disease) Lyme disease	• Via open wounds. • Contact with water contaminated with urine from infected rats, Infection can enter the body through cuts and scratches or	• Wear long clothing and gloves. Cover cuts and broken skin with waterproof plasters. • Wash hands before and after contact with water and prior to eating, drinking and smoking. • Examine for insect bites and ticks.

	Hepatitis A or B Needlestick injuries Blue-green algae	lining of the mouth, throat or via the eyes. • Insect bites.	• Seek medical advice immediately if you experience these symptoms.
	Slips, trips and falls on land	• Most notably along slippy surfaces (e.g., exposed mud, slimy rocks) on riverbank tops.	• Take care whilst walking in the field, particularly along wet or damp environments. • Wear appropriate footwear with suitable underfoot grip.
	Weather-related issues	• Medical issues from hot and dry weather (e.g., dehydration, sun stroke, sunburn). • Medical issues from wet and cold weather conditions (e.g., hypothermia).	• Check weather forecast and wear appropriate clothing accordingly (taking a spare set of clothing in case of any accidents). • Take sun cream (SPF 15+). • Drink plenty of fluids.
	Traffic	• Vehicular movements	• Practice care and attention before crossing roads
	Agricultural practices	• Disturbance to or injury from livestock. • Fencing-related injuries (e.g., barbed wire) or electric shocks.	• Get land owner / farmer permission. • Follow The Countryside Code.
	Public	• Any threatening behaviours or actions like to cause risk / harm.	• Never sample alone and have a mobile phone on your person to call for help (dial 999 if necessary). • Leave the site for personal safety.
	Risk to the environment	• Disturbance to overland habitats (e.g. bankside vegetation). • Disturbing nesting birds or other fauna using overland habitats along river corridors like otters and different bird species (e.g., dippers, kingfishers, moorhens).	• Take care placing feet while walking, and where dry and level aim to step on artificial materials (e.g., bricks, concrete) or bare ground. • Follow government guidelines on protecting wild birds and The Countryside Code.

Below you'll see the university-approved risk assessment and the Control of Substances Hazardous to Health Regulations (COSHH) forms for water chemistry kits (repeating much of above).

School of Geography, Earth and Environmental Sciences
Fieldwork Risk Assessment and Mitigation Plan (F-RAMP)

[*Version 11th September 2023*]

UNIVERSITY OF BIRMINGHAM

FOR STAFF & DOCTORAL/POSTDOCTORAL RESEARCHERS

This form is for field-related activities and must be completed by the person undertaking the activity before commencing any field or practical work. Activities must NOT begin until this form has been self-approved (see below) or approved by the GEES H&S Coordinators.

Submission & Approval of this form:

- **For Staff:** Where all Residual Risks (RR) levels are ≤6, staff members can self-approve this form and email it to gees-safety@contacts.bham.ac.uk, otherwise must submit it to the GEES H&S Coordinators for approval.
- **For Doctoral and Post-Doctoral Researchers:** Where all Residual Risks (RR) levels are ≤6, supervisors may approve the risk assessment (then send it to gees-safety@contacts.bham.ac.uk), otherwise must submit it to the GEES H&S Coordinators for approval.

All supplementary information outlined in the risk assessment (e.g., manual lifting assessment, etc.) should be submitted with this completed risk assessment.

Fieldwork summary	
Project / Research / Field course Title:	Birmingham River Champions (project ID: 2547055)
Fieldwork dates (s) (or pattern of repetition):	16/04/2024-31/12/2025
Location (including country):	Birmingham, United Kingdom
Activity description: *(Describe the activity in a paragraph or so, mentioning the activities that may be source of risk)*	This project entails training and equipping volunteers to monitor different aspects of river ecosystem health. After discussing the project with the risk assessment team, the volunteers that have signed up to the project are being treated as students for the purpose of this form. This risk assessment applies to both the researcher (Dr James C. White - JCW) and volunteers both within training courses (led by JCW), as well as when volunteers are monitoring independently in their own time after receiving appropriate training (without the presence of JCW). It will be made clear to all volunteer groups that only individuals that have formally signed up to the programme and read an accompanying Participant Information Sheet will be allowed to monitor within the project. Myself and volunteers will be entering shallow rivers (<40cm – below welly height) to collect macroinvertebrates into nets via kick sampling strategies. Bankside surveys will also be demonstrated and undertaken along rivers in open green spaces.

Taught Field Courses [*to be filled by field course leaders only*]	
Degree programme and module code/name:	
Academic Year:	

Number of students:		**Staff/student ratio (>1:10): ('Staff' includes PG/DR demonstrators)**	

Risk Assessment Approval	
Risk assessment file name: *Change the submitted file name to match the following structure:* Tripstartdate_F-RAMP_location_Surname (e.g., 2021-04-13_F-RAMP_Lickey-Hills_Hilton)	2024-04-16_F-Ramp_Birmingham_White
Date of assessment (dd/mm/yy):	16/04/2024
Risk assessment completed by: *(Assessor – usually person carrying out activity, or fieldwork leader; please select your role below your name)*	Dr James C. White Staff Postdoc PhD Yes
Risk assessment sign-off. This is determined from the overall project risk that is a combination of Residual Risk (RR) Scores for individual hazards calculated at the end of this form, potential risks of reputational damage, and other factors (e.g., experience with the procedures, competence of researcher, location of work, etc.) as outlined in the UoB RAMP guidance. The individual approving the work must be satisfied that the risks have been adequately identified and controlled.	
Level 1 – For individual Residual Risk levels ≤6: *(Supervisors/PI's may approve risk assessments for DR's and Post-Doc researchers. Staff may self-approve risk assessments)*	*[Add name and email of approver]* d.m.hannah@bham.ac.uk
Level 2 – For individual Residual Risk levels >6: *(Please complete Level 1 approval by supervisor/PI/self as appropriate, and then submit to gees-safety@contacts.bham.ac.uk for evaluation by SHSEC. Do not commence activity until approval received.)*	Leave blank (for official use only)
Level 3 – For individual Residual Risk >10: *(SHSEC will pass form from Level 2 approval to subject expert or CHSEC for approval.)*	Leave blank (for official use only)
Major residual risks *Give details of any activity where RR = 10-25*	

Contact details		
	Name	**email / contact number**
Field party leader or name of researcher:	Dr James C. White	j.c.white.1@bham.ac.uk
Additional group members *(where appropriate):*	N/A	N/A
University Emergency Contact(s) *(add additional people if necessary, e.g., supervisor)*	UoB 24-hour Switchboard	0121 4144444

Field base/accommodation *(where appropriate):*	Name and full address: Always travelling from home address: [redacted]	

International/air travel	
Destination country(s):	**N/A**
Are all of your overseas destinations safe to visit as defined by the Foreign & Commonwealth Office (http://www.fco.gov.uk/)? You should include all areas you travel to or through, including airport stops, regardless of whether you are planning to work or stay there. Continue to monitor FCO advice in the days before you travel, and regularly during your trip abroad.	Please select
Has University Travel Insurance been applied for? This is required if any part of your journey is by aircraft (both UK and international destinations) or abroad. Apply online: travelcover.bham.ac.uk	Please select
Have you checked if you have the appropriate visa and/or authorization for research and/or field work in an overseas destination? Check entry requirements and visa types in the relevant official Consulate/Embassy website of the country you plan to visit.	Please select
Please tick to confirm you have read the University's '**Travelling and Working Abroad Guidance**', and completed the checklists within (https://intranet.birmingham.ac.uk/hr/documents/public/hsu/hsuguidance/24twa.pdf)	☐
Please consider whether you/your group are likely to encounter significant cultural differences when *travelling, working, and living in* your destination country, which may affect the safety and wellbeing of you, and others in your field party. You should include any risks to personal safety in the risk matrix table at the end of this form.	

Vehicles and driving			
Driver(s) or company if using a paid service:	**Vehicle registration (where known):**	**Legally permitted to drive at location?**	**Insured for business use*?**
N/A		Please select	Please select
		Please select	Please select

**if using own vehicle, insurance must include cover for occasional business use*

Medical and first aid needs	
***[For taught field course only]* Have medical forms been completed for all staff and students?**	**No**

Do you any of the participants have medical circumstances that need to be considered? *(Medical forms can be completed on a voluntary basis by participants before fieldwork and are to be held in accordance with Data Protection law)*	As per the ethics assessment, all volunteers that have signed up to the initiative have acknowledged that they have read an Participant Information Sheet that states "Volunteers can choose to participate in whichever monitoring technique they feel physically and mentally able to undertake." This information sheet also contains details of the techniques and key risks (expanded on in this document).
Any action required? *(if yes, please describe the actions to be undertaken)*	No
Are first aid kits required and if so, where will they come from?	No Provided by:
Number and type of emergency shelters required*: *(for remote and/or mountain environments - 2, 4, 8 and 12 person shelters available)*	No

**requests should be sent to Bethan Philips (PhilliBT@adf.bham.ac.uk)or David Tubbs (D.Tubbs@bham.ac.uk)*

Communication plan

Keeping contact and checking-in

*((Provide details of how party members will maintain contact with each other (if working in group) and with emergency contact. **Lone working** requires hourly check-ins by text or call with named appropriate person(s) (e.g., friend, family member, etc.) who should hold a copy of this form. Please provide emergency contact name and number)*

JCW will never be lone working and will always be accompanied by representatives from the Environment Agency, Severn Trent or the Birmingham and Black Country Wildlife Trust (the project partners), as well as volunteers. For volunteers undertaking monitoring in their own time (after receiving training), they should never be working remotely. This has been specified within the Participant Information Sheet that they are asked to read prior to signing up to the initiative.

Is ANY lone working planned or likely during the trip?	No

Mobile phones

(Provide details of mobile phone coverage in the field area and any contingency that may be needed (e.g., 2-way radios, satellite phone*). Consider what to do if an accident happens in an area with poor phone coverage).*

Phone coverage generally good across Birmingham, but will never be lone working.

**requests should be sent to Bethan Philips (PhilliBT@adf.bham.ac.uk)or David Tubbs (D.Tubbs@bham.ac.uk)*

Supporting local information
Description of location(s) for <u>each day</u> of fieldwork: *(Add general directions, or if in remote regions, use either what3words.com (or the app) or geographic coordinated (dd°mm'ss")* Various locations in Birmingham – mainly central-southern Birmingham.
Land use permission (as applicable)**:** *(owner/manager name and contact details, protected areas, archaeological sites, etc.)* Publicly accessible parks will always be visited.

Local emergency services (applicable)	
Local A&E department: *(Check this LINK to find nearest emergency to your location)*	*[Add hospital name, address, and telephone]* Queen Elizabeth Hospital, Mindelsohn Way, Edgbaston, Birmingham, B15 2WB. 0121 371 2000
Other emergency services *(e.g., mountain rescue, coastguard, etc.)*	*[Add names, address, and telephone]* N/A

Emergency response procedures
(Provide details of any procedure to be taken in the event of emergency including casualty evacuation) 999 to be dialled immediately

Specific hazard reporting (delete section if not appropriate)	
Do you need to collect/return items from university buildings before/after fieldwork?	No
Do manual handling activities take place?	Yes
If yes, have you completed a manual handling assessment? [https://intranet.birmingham.ac.uk/hr/wellbeing/worksafe/topics/manualhandling.aspx] (assessment must be appended to this form)	No
Will dangerous or hazardous equipment be used?	No
If yes, have you completed a Standard Operating Procedure? (SOP must be appended to this form)	No

Are chemical hazards involved?	No
If yes, have you completed a Chemical Hazard and Risk Assessment (CHRA)? (assessment must be appended to this form and approved by lab manager)	No
Are biological hazards involved? (e.g. sewerage works, farms, microbiological samples)	No
If yes, have you completed a Biological Hazard Risk Assessment? (assessment must be appended to this form and approved by biological safety officer)	No
Are compressed gasses to be used?	No
If yes, have you completed a COSHH and online safety course? (assessment must be appended to this form and approved by lab manager)	No
Will prohibited plants, plant pests, pathogens or soils be imported from outside of the UK?	No
If yes, have you arranged authorisation from the Animal and Plant Health Agency? (contact lab manager Eimear Orgill for further information and details of designated labs in GEES)	No

Hazard and Risk Scoring

		Likelihood (L)				
		1 Rare	2 Unlikely	3 Possible	4 Likely	5 Almost certain
Severity (s)	**5 Catastrophic** death or permanent/ irreversible health effects	5	10	15	20	25
	4 Major injury long term incapacity and/or >14 days off work	4	8	12	16	20
	3 Moderate injury requiring intervention and/or 4-14 days off work	3	6	9	12	15
	2 Minor injury requiring first aid and/or <3days off work	2	4	6	8	10
	1 Negligible minimal injury not requiring first aid	1	2	3	4	5

For **EVERY ACTIVITY**, you must identify the POTENTIAL HAZARD, the HAZARD EFFECT, and the PERSON AT RISK.

For EVERY HAZARD EFFECT, you must calculate the RISK RATING.

Initial Risk Rating (IR)
= Severity (S) x Likelihood (L)
Control measures required where IR ≥ 3.

Residual Risk Rating (RR) is calculated after control measures. The highest RR contributes to the sign-off level as below:

Level 1 (RR = 1-6) PI/supervisor
Level 2 (RR = 8-12) SHSEC
Level 3 (RR = 15-25) CHSEC

During the pandemic all risk assessments require at least Level 2 approval.

Potential hazards may arise from your travel, your working and living environment, the operation/activity, equipment being used, substances, interaction with others, access to sanitation and personal facilities, tiredness, illness, hunger, or personal and cultural issues. Combinations of hazards may increase the hazard effect. Control measures may include safety equipment, communication plans, training and education, or method management such as Standard Operating Procedures or Safe System of Work. Examples of areas of risk are given at the end of this document.

It is the responsibility of the individual(s) completing this form to assess all risks relating to the project including the pre-populated contents; you may need to revise these if your activities will change in the future. The Initial Risk (IR) and Residual Risk (RR) scoring is subjective, but it should be calculated based on the table above. Note, the Severity (S) in the IR and RR should remain unchanged, while the likelihood (L) can be reduced in the RR after the application of the control measures.

USE YOUR RESIDUAL RISK SCORE (RR) TO COMPLETE THE SIGN-OFF SECTION AT THE START OF THE FORM

Potential Hazard	Hazard Effect	Person At Risk	Initial Risk Rating	Control Measures	Residual Risk Rating
(1) Psychological wellbeing in relation to Covid-specific activities	Anxiety and stress caused by concerns around undertaking the fieldwork activities.	JCW and volunteers	**S**2 x **L**2 **IR** = **4**	The project lead to hold regular communications with the wider project team and line manager about their experiences and expectations. The project team have outlined their role in supporting volunteers, and it has been very clear during the project sign up process that volunteers should only participate when they are comfortable doing so and can withdraw at any time.	**S**2 x **L**1 **RR** = **2**
(2) Respiratory and contact infections	Catching or transmitting respiratory and contact infections	JCW and volunteers	S3 x L2 **IR = 6**	This project is primarily outdoor monitoring where respiratory and contact infections are unlikely, although some training takes place inside the classroom. The project lead will follow national and university guidelines for managing respiratory and contact infections, and hand sanitiser will be supplied to volunteers in both the classroom and field settings. I will wash hands regularly and additional handwashing is to be performed if feel that I have risked becoming contaminated or am at risk of contaminating others (e.g., coughing, sneezing). All solid waste from hand sanitising to be disposed of in general waste bins. ******Only if there is a need for face coverings for any reason****** Face coverings are not PPE and are not normally required to be worn in the workplace. However, where face coverings may reduce the risk of respiratory infection transmission from one person to another the expectation is that individuals will wear a face covering. This will be especially important where fieldworkers and others come into contact with people they do not normally meet and may be more vulnerable to risk from infections. Add details of personal covid context., e.g, 'To reduce the risk of catching or transmitting respiratory and contact infections, the participants are double vaccinated and feel	S3 x L1 **RR = 3**

				comfortable with the risks posed in undertaking this fieldwork'	
***Add additional project-specific risks below, as necessary. See "Checklist of possible hazards" at the end of the form*. Use same format for Initial Risk (IR) and Residual Risk (RR) calculation as in the top two raws.**					
(3) On/in/near flowing or standing water	Associated hazards outlined below	JCW and volunteers	S2xL3 IR = 6	Associated control measures outlined below	S2xL2 **RR = 4**
(4) Trips and falls	Minor injury (e.g., twisted ankle)	JCW and volunteers	S2xL3 IR = 6	Caution to be exercised when placing footing; shallow waters (<40cm) only to be accessed during non-flood conditions; suitable waterproof, non-slip shoes (i.e., wellies) to be worn. Volunteers have been made aware on these points within the Participant Information Sheet and appropriate techniques will be demonstrated in training events.	S2xL2 **RR = 4**
(5) Insect bites	Soreness, itchiness and allergic reaction	JCW and volunteers	S1xL3 IR = 3	JCW has no know allergies, but will wear long clothing when walking through wooded areas (to avoid tick bites and hence Lyme's disease) and will wear insect repellent when temperatures are high. Avoid coming into contact with Giant Hogweed. Volunteers have been made aware on these points within the Participant Information Sheet.	S1xL2 **RR = 2**
(6) Bacterial infection	Illness	JCW and volunteers	S2xL2 IR = 4	JCW will cover any wounds with plasters before sampling and will wash hands before eating/drinking subsequently. Extra caution will be exercised in rivers likely to contain animal urine – namely highly urbanised and agricultural settings that will likely contain rat or cattle urine, respectively (to reduce the chances of contracting Leptospirosis). Volunteers have been made aware on these points within the Participant Information Sheet.	S2 x L1 **RR = 2**
(7) Weather-related issues	Dehyrdration, sun burn, hypothermia	JCW and volunteers	S2 L3 IR = 6	Training and monitoring should only be undertaken during safe weather conditions and when water levels are low enough to permit safe access. Clothing suitable to weather conditions will be worn after checking the weather forecast. Sun cream (SPF 15+) and plenty of fluids will be taken to site during hot weather. Volunteers have been made aware on these points within the Participant Information Sheet.	S2 x L2 **RR = 4**
(8) Chemical hazards (toxic chemicals)	Fatality, severe skin burns and eye damage	JCW and volunteers	S5xL2 IR =10	The Freshwater Watch kits measuring nitrate and phosphate tubes contain a strong acid substance, while the reagents in the Hanna Ammonia checker are highly toxic and corrosive. Both are contained securely within	S5 x L1 **RR = 5**

				appropriate containers that make it easy to use safely, but caution will be exercised. Gloves will be worn when sampling and extra caution to be taken so that these toxins remain within the parameters of the respective sampling equipment. Sample biproducts will be disposed of down a sink (solution from nitrate / phosphate tubes squeezed out and the ammonia vial emptied and rinsed with tap water). Sink surface to be rinsed and wiped down after the solutions have been disposed of. If any contact occurs with eyes and skin, or enters the mouth, areas will be rinsed and wash thoroughly with plenty of clean water. Medical advice will be immediately sought if an adverse reaction occurs or if any substances are ingested. These risks have been clearly communicated to volunteers within training, this and an accompanying risk assessment, and links to associated safety documents provided by the supplier have also been made available.	
(9) Issues with the general public	Threatening or abusive behaviours	JCW and volunteers	S3 x L2 IR = 6	Lone sampling should never take place and participants should carry a mobile phone and call 999 if necessary. Participants should leave the site immediately for personal safety. Volunteers have been made aware on these points within the Participant Information Sheet.	S2 x L2 **RR = 4**
(8)		Please select			
(9)		Please select			
(10)		Please select			
(11)		Please select			
(12)		Please select			
(13)		Please select			
(14)		Please select			
(15)		Please select			

Checklist of possible hazards

Environment/location

- Weather conditions: – cold, hot, rain, snow, sun, wind
- Mountain, remote or wild country
- Cliffs, pits and quarry faces
- Steep or high banks
- On/in/near flowing or standing water
- Coastal or tidal areas
- Roadside working
- Urban or industrial areas
- Contaminated ground
- Wild animals, livestock or insects
- Access to welfare facilities
- Working in public spaces
- Socio-political differences and stability
- Language differences
- Accommodation

Operational/activity

- Travelling to and from site
- Driving off-road
- Use of taxis, car hire
- Health, **individual health** and fitness, stamina
- Manual handling (lifting heavy items or repetitive tasks)
- Lone working
- Proximity of plant or machinery
- Slips and trips
- Falling from heights/falling objects
- Working with contractors
- Failing light
- Public protests or demonstrations

Equipment

- Augers
- Digging tools
- Rock hammers
- Generators and electrical equipment
- Lifting equipment
- Machinery
- Operation of vehicles

Substances

- Biological hazards including viruses
- Chemical hazards
- Contaminated samples (water, soils etc)
- Dust
- Explosive materials
- Flammable materials
- Radiation (ionising or non-ionising)

Checklist of possible control measures

Communications & management

- Mobile/satellite phone, radio
- Communication plan
- Maps/sat-nav/directional aids
- Emergency response plan (ERP)
- Emergency contact list
- Location of A & E/medical facilities

Personal protective clothing

- Face coverings,
- Disposable gloves
- Weatherproof jacket & trousers
- Protective/non-slip footwear
- Weatherproof hat
- Insulated gloves/gauntlets
- Overalls/disposable suits
- High-visibility wear
- Sun protection clothing
- Safety glasses/goggles
- Ear plugs/ear defenders
- Hard hat

Safety Equipment

- Sterile wipes
- Sterilizing hand gels
- First-aid kit
- Food & drink
- Sun protection cream
- Insect repellent
- Torch/headtorch

Training

- Off-road driving
- Field first-aid
- Personal security
- 2-way radio
- Chemical Safety Training
- Manual Handling Training

University of Birmingham
Chemical Hazard and Risk Assessment

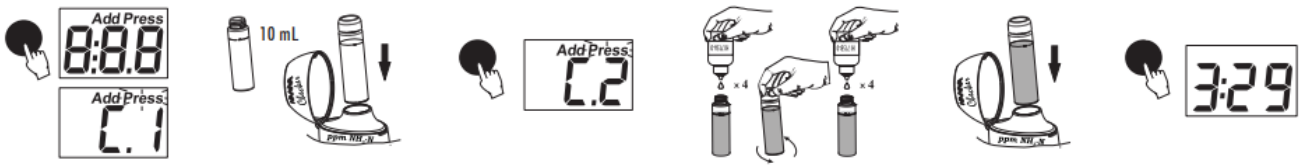
You will need the Safety Data Sheet(s) for the substance(s) to fill out this form.
Data Sheets are available from the supplier or from ChemWatch.
Refer to Health and Safety Guidance – Chemical Hazard and Risk Assessment GUIDANCE/22/CHRA/05.

Name of Assessor:	James White		
Name of Supervisor: *If applicable*			
School/Department:	Geography, Earth and Environmental Sciences		
Date of assessment:	**23/10/2024**	**Assessment number:**	

The Activity

Location of activity: *Building and room number*	Monitoring to be undertaken outdoors, working out from the Wolfson Laboratory, Biosciences
Activity assessed:	Hanna Ammonia checker for citizen science project

Intended use:
Give details of the procedure. You may attach a protocol / instructions. It may be useful to break the procedure down into stages (suggested maximum of 4), to facilitate consideration of risks and controls at each stage.

Stage 1	Fill a vial with river water to 5ml line. Add 4 drops of the **H1715A-0** reagent, which is contained a glass drop bottle. Replace cap and swirl.
Stage 2	Add 4 drops of the **H1715B-0** reagent. Replace cap and swirl.
Stage 3	
Stage 4	

Justification:
Justification is needed for exceptionally hazardous substances. These include carcinogens, mutagen, teratogens, asthmagens and highly spontaneous reactive substances

This technique affords a cost-friendly and accurate way of measuring ammonia, which can detect sewage pollution. The toxic chemicals are well contained and the sampling will be done in the outdoors (well ventilated).

Frequency of the activity:	Monthly	**Duration:**	5-mins

Materials Involved

Include all materials used, produced and/or encountered.

Name	CAS no.	Quantity*	Form	Hazards	H numbers	H statements	WEL**	Toxicity rating***
Nessler's Reagent (containing Potassium tetraiodomercurate (ii) & Sodium Hydroxide)	7783-33-7 / 1310-73-2	20ml	Liquid	Danger	H290 H300+H310+H330 H373 H314 H400 H411	May be corrosive to metals. Fatal if swallowed, in contact with skin or inhaled May cause damage to organs through prolonged or repeated exposure Causes severe skin burns and eye damage. Very toxic to aquatic life Toxic to aquatic life with long lasting effects	0.02 mg/m3	1/2

**Quantity should be the largest amount handled*
***WEL Workplace Exposure Limit (see GUIDANCE/22/CHRA/05 for further information)*
****Toxicity rating. Rated on a scale or 1 to 4 using the CLP Scale, given in Appendix 1 (see GUIDANCE/22/CHRA/05 for further information)*

Reportable substances

Do any materials involved contain the following? ☐ YES ☒ NO

H317, H334, H340, H350, H350i, nanomaterials, explosives, chemical weapons precursors, drugs precursors, ozone depleting substances, metal working fluids, used engine oils or respirable crystalline silica.
See GUIDANCE/22/CHRA/05 for additional guidance.

If you have answered 'Yes' to the above, have you reported it to Workplace Wellbeing? ☐ YES ☐ NO

Please complete and send a reportable substance notification form.

Risks

Specify risks to H&S from intended use for each stage identified above:
For procedures consisting of more than 4 stages, please continue in Appendix A.

	Possible route(s) of entry *(Select all that apply at each stage)*	Process factors influencing the risk of exposure *(Select all that apply at each stage)*	Risk implications *(Select all that apply for the procedure as a whole)*	Additional comments on the hazards associated with these substances
Stage 1	☒ In contact with skin and eyes ☐ Inhalation ☒ Ingestion ☒ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☒ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Fire or explosion risk? *If yes, include prevention.* *(Include flash points, auto-ignition temperature and/or any other relevant information.)*	
Stage 2	☒ In contact with skin and eyes ☐ Inhalation ☒ Ingestion ☒ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☒ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Chemical reactions or thermal runaway? *If yes, include containment/ incompatibilities with other substances, hazardous decomposition products.*	
Stage 3	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Gas release or oxygen deficiency? *If yes, include control measures.*	
Stage 4	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Other (*please specify):*	

Persons who may be at risk:
Who is exposed to it?

☒ Departmental Staff
☐ Undergraduate students
☒ Postgraduate students
☐ Visitors
☐ Estates / cleaning / security staff
☐ Contractors, including service engineers
☐ Young workers
☐ Immuno-compromised individuals
☐ Pregnant women or women of reproductive age

☒ Others. Please specify:
(Include names if appropriate)

Volunteers that have signed up to the Birmingham River Champions project. They've had to confirm they've read a risk assessment (F-RAMP approved) within a sign up process.

Notification method:
Groups at risk of exposure should be informed of any risk to which they may be exposed from this work activity

☐ Warning notice displayed on door
☐ Warning notice displayed within work area
(e.g. laboratory bench, fume cupboard etc.)
☐ Hazards will be discussed with other workers
☐ Email notification to be sent to other workers

☐ Other. Please specify:

If nanomaterials are being used, please categorise the nanomaterial risk-level:

☐	HIGH:	Dry, dispersible nanomaterials or nanomaterial agglomerates / aggregates
☐	MEDIUM:	Nanomaterials suspended in liquids
☐	MEDIUM:	Nanomaterials attached to a 2D surface
☐	LOW:	Nanoparticles embedded into a solid 3D matrix

Approval for low- and medium-risk work involving nanomaterials is via principal investigator. Approval for high-risk nanomaterials work granted by either by the Safety Committee or jointly by the Safety Committee and the H&S Coordinator.

Control Measures

Could the use of hazardous substances be eliminated? ☐YES ☒NO
(If so, you should do so)

Could you substitute any of these materials for less hazardous alternatives or forms? ☐YES ☒NO
(If so, you should do so)

Controls and PPE *Section 7, 8 & 15 of the Safety Data Sheet*

What controls are required for these substances?
For procedures consisting of more than 4 stages, please continue in Appendix A.

	Engineering controls	Special requirements *(e.g. special glassware; no vibration; Fluoro-plastic apparatus; no dry chemicals on heated surfaces; must be in the dark, not in spray/mist form, reduction in number of people exposed, authorised persons only)*	PPE *(PPE is a last resort and should be used in addition to all other control measures identified if the combination of these controls fails to achieve adequate control of exposure)*
Stage 1	☒ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*	Eye protection and Polyethylene (PE) Gloves to be worn by all trained personnel undertaking the monitoring	☒Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☒Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*

Stage 2	☒ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*	Eye protection and Polyethylene (PE) Gloves to be worn by all trained personnel undertaking the monitoring	☒Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☒Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*
Stage 3	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*
Stage 4	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*

Monitoring **Performance of control measures:**
e.g. fume hood flow rates required, maintenance, examination and testing of engineering controls, PPE, RPE

☐ **Fume cupboards and LEV:**

- A thorough examination and test at least every 14 months, in accordance with University Policy and COSHH Regulations.
- A regular, routine maintenance schedule, in accordance with University Policy.
- User checks undertaken prior to each use, in accordance with University Policy.

☒ **PPE/RPE:**

- Users should meet the requirements for PPE and RPE, as set out in University Policy, including maintenance, inspection, and testing, and suitability assessment.
- Before each period of work, users must carry out an external visual inspection of all PPE to confirm suitability for the work activity and that it is not damaged or degraded so as to impair fit or performance.
- Respirators in regular use (other than one-shift disposable) must be thoroughly examined and, where appropriate, tested at least once a month or more frequently according to circumstances. Respirators used only occasionally should be examined and tested prior to next use and maintenance carried out as appropriate. N.B. The selection of a tight fit respirator for an individual wearer must include an appropriate fit test.

☐ **Pressure vessels** (*e.g. liquid nitrogen transport dewars*):

- Regular examination, inspection and testing, in accordance with University Policy and PSSR Regulations, and a written scheme is in place where required.
- Pressure vessels are checked regularly for general condition and leakage.

☐ **Other measures not listed above** (*e.g. anemometers fitted to LEV equipment*). Please specify:

Monitoring Workplace Exposure

Will monitoring for airborne contaminants or personal monitoring be required? ☐YES ☒NO

If yes, give details:

Monitoring Health Surveillance

Is there a known health impact from this level of exposure? ☐YES ☒NO

If yes, is health surveillance required to assess whether this health impact is developing in vulnerable individuals or all people exposed? ☐YES ☒NO

If yes, please contact Workplace Wellbeing at occupationalhealth@contacts.bham.ac.uk

Instruction and Training

Are any Standard Operating Procedures (SOPs) referred to in this protocol? ☐YES ☒NO **SOP reference number(s):**

Specify training courses and/or special arrangements:

Storage and Waste Disposal

Storage

How should the materials be stored?
e.g. locked cupboard appropriately labelled and signed; stored away from other substances

Stored inside container away from non-trained individuals and wildlife.

Appropriate storage provision should be made prior to chemical purchase

Segregation *Section 10 of the Safety Data Sheet*

Is there any other chemical that these substances must not come in to contact with? Procedure in case of reaction?

N/A – there are no particular risks of reactions with other substances under normal conditions

Disposal *Section 13 of the Safety Data Sheet*

How should the substance be disposed of?
Select all those that apply

☐ **Non-hazardous** *(Disposal via standard waste stream e.g. laboratory bin or sink)*

☐ **Halogenated solvent** - *an organic solvent containing halogens, i.e., Cl, F, Br, I*
(Disposal via specialist contractor through your local Health and Safety co-ordinator)

☐ **Non-halogenated solvent** *(Disposal via specialist contractor through your local Health and Safety co-ordinator)*

☒ **Specialist hazardous waste disposal** - *including hazardous aqueous waste*
(*Disposal via specialist contractor through your local Health and Safety co-ordinator)*

☐ **Treatment**
e.g. neutralisation of hazardous waste Please detail:

Additional disposal details:
(Include 6-digit code and HP number if disposal is via external contractor and the coding is not undertaken centrally by your local H&S co-ordinator. See Health and Safety Guidance - Hazardous Waste: Guidance on Assessment.)

Excess or expired reagent should be disposed of according to local regulations via the laboratory technician or manager.

Other Precautions and Emergency Procedures

Spillages or uncontrolled release *Section 6 of the Safety Data Sheet*

How should an accidental release or spillage be dealt with?
Consider both small- and large-scale spillages and release through failure of control measures

To control the hazards:
e.g. spread absorbent material on liquid spills, location of absorbent material, eliminate sources of ignition, isolation from power supply etc.

Prevent any further spillage if safe to do so.

The product must not come into contact with surface or ground water or enter the sewage system.

Put the leaked product into a suitable secondary container.

Dispose of all waste as hazardous materials.

To protect personnel:
Protection for personnel involved in the clean-up

Eye protection and protective gloves to be worn throughout the full procedure.

To render site of emergency safe:
Equipment needed for decontamination, clean-up etc.

Plentiful supply of clean water.

Evacuation required? ☐

First Aid *Section 4 of the Safety Data Sheet*

What should be done in the case of:

Ingestion:

Drink as much water as possible. Seek medical advice/attention immediately. Do not induce vomiting unless explicitly authorised by a doctor.

Eye contact:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice / attention immediately.

Inhalation:

Ensure surveyors are outdoors / getting fresh air away from the accident scene. First aid trained surveyors could administer artificial respiration. Seek medical advice / attention immediately if symptoms appear.

Skin contact:

Take off immediately all contaminated clothing. Rinse skin with water. Seek medical advice / attention immediately if symptoms appear.

In the event of contamination or exposure, it is important to be able to contact a first aider without delay. Ensure you are aware of your local first aiders prior to commencement of work.

Fire Precautions *Section 5 of the Safety Data Sheet*

What actions should be taken in the event of fires involving these substances?

Avoid shock and friction. Avoid the bottle overheating.

The first step should be to raise the alarm BUT if a fire extinguisher is needed, what extinguisher(s) should be used? *e.g. CO_2, foam, fire blanket, Class D Powder extinguisher*	Any conventional fire extinguisher: carbon dioxide, foam, powder and water spray

Only tackle a fire if you have received training and it is safe to do so. Never put yourself at risk.

Review

Review date: *Maximum interval 3 years. Please note, some areas (including Chemistry) set a maximum review date of 1 year. Please check locally if unsure.*	**22/10/2027**

You should review your risk assessment if you think it may no longer be valid (e.g. following significant changes to hazards, such as a change in process, materials, quantities, or following an accident, incident or ill-health.)

Assessment of Risk

Is the level of risk acceptable (are hazards to health adequately controlled with control measures in place)? ☒ YES ☐ NO

Overall assessment of risk:
Taking into account the above factors, what level of risk does the procedure pose?

☐ EXTREME: likely to present *significant or permanent health effects* to the *majority of individuals*
☐ HIGH: likely to present a *significant risk* to health to the *majority of individuals*
☐ MEDIUM: may present a *significant risk* to health to a *minority of individuals*
☒ LOW: the *majority of individuals* will be unaffected with only a *minimal risk* to health
☐ INSIGNIFICANT: no foreseeable risk of injury

Declaration

Note: If working with nanomaterials, approval for low- and medium-risk work is via the Principal Investigator. Approval for high-risk nanomaterials work is to be granted by either by the Safety Committee or jointly by the Safety Committee and the Health and Safety Coordinator.

Assessor(s) Name:	Assessor(s) Signature:	Date:
James White	James White	23/10/2024

The line manager, supervisor or principal investigator should sign below to show that the assessment is a correct and reasonable reflection of the hazards and of the control measures and actions required:

Supervisor(s) Name:	Supervisor(s) Signature:	Date:
James White	James White	23/10/2024

Appendix

Appendix 1 CLP Toxicity rating

Toxicity Rating	H number and statement
1/2	H300 Fatal if swallowed H310 Fatal in contact with skin H330 Fatal if inhaled
3	H301 Toxic if swallowed H311 Toxic in contact with skin H331 Toxic if inhaled
3 (ASPT1)	H304 May be fatal if swallowed and enters airways
4	H302 Harmful if swallowed H312 Harmful in contact with skin H332 Harmful if inhaled
Not classified as toxic	

University of Birmingham
Chemical Hazard and Risk Assessment

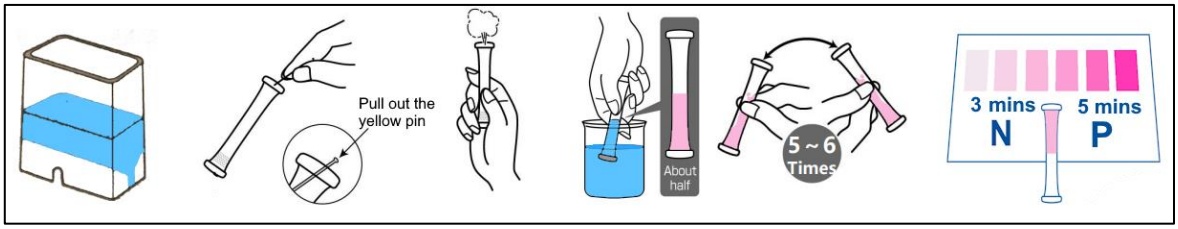
You will need the Safety Data Sheet(s) for the substance(s) to fill out this form.
Data Sheets are available from the supplier or from ChemWatch.
Refer to Health and Safety Guidance – Chemical Hazard and Risk Assessment GUIDANCE/22/CHRA/05.

Name of Assessor:	James White		
Name of Supervisor: *If applicable*			
School/Department:	Geography, Earth and Environmental Sciences		
Date of assessment:	**23/10/2024**	**Assessment number:**	

The Activity

Location of activity: *Building and room number*	Monitoring to be undertaken outdoors, working out from the Wolfson Laboratory, Biosciences
Activity assessed:	Freshwater Watch nitrate citizen science measurements using Kyoritsu packtests.

Intended use:
Give details of the procedure. You may attach a protocol / instructions. It may be useful to break the procedure down into stages (suggested maximum of 4), to facilitate consideration of risks and controls at each stage.

Stage 1	Take pin out of the top of the sealed plastic tubes containing reagents, press in and suck sample water in
Stage 2	
Stage 3	
Stage 4	

Justification:
Justification is needed for exceptionally hazardous substances. These include carcinogens, mutagen, teratogens, asthmagens and highly spontaneous reactive substances

This technique affords a cost-friendly and accurate way of measuring ammonia, which can detect sewage pollution. The toxic chemicals are well contained and the sampling will be done in the outdoors (well ventilated).

Frequency of the activity:	Monthly	**Duration:**	5-mins

Materials Involved

Include all materials used, produced and/or encountered.

Name	CAS no.	Quantity*	Form	Hazards	H numbers	H statements	WEL**	Toxicity rating***
PACKTEST Nitrate (containing Zinc powder, Polyethylene and N, N-Diethy-N'-(1-naphthyl) ethylenediamine oxalate)	7440-66-6 / 9002-88-4/ 29473-53-8	140g	Powder	Warning	H317	May cause an allergic skin reaction.	-	-

*Quantity should be the largest amount handled
**WEL Workplace Exposure Limit (see GUIDANCE/22/CHRA/05 for further information)
***Toxicity rating. Rated on a scale or 1 to 4 using the CLP Scale, given in Appendix 1 (see GUIDANCE/22/CHRA/05 for further information)

Reportable substances

Do any materials involved contain the following? ☒ YES ☐ NO

H317, H334, H340, H350, H350i, nanomaterials, explosives, chemical weapons precursors, drugs precursors, ozone depleting substances, metal working fluids, used engine oils or respirable crystalline silica.
See GUIDANCE/22/CHRA/05 for additional guidance.

If you have answered 'Yes' to the above, have you reported it to Workplace Wellbeing? ☒ YES ☐ NO

Please complete and send a reportable substance notification form.

Risks

Specify risks to H&S from intended use for each stage identified above:
For procedures consisting of more than 4 stages, please continue in Appendix A.

	Possible route(s) of entry *(Select all that apply at each stage)*	Process factors influencing the risk of exposure *(Select all that apply at each stage)*	Risk implications *(Select all that apply for the procedure as a whole)*	Additional comments on the hazards associated with these substances
Stage 1	☒ In contact with skin and eyes ☒ Inhalation ☒ Ingestion ☒ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☒ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Fire or explosion risk? *If yes, include prevention.* *(Include flash points, auto-ignition temperature and/or any other relevant information.)*	
Stage 2	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Chemical reactions or thermal runaway? *If yes, include containment/ incompatibilities with other substances, hazardous decomposition products.*	
Stage 3	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Gas release or oxygen deficiency? *If yes, include control measures.*	
Stage 4	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Other (*please specify):*	

Persons who may be at risk:
Who is exposed to it?

☒ Departmental Staff
☐ Undergraduate students
☒ Postgraduate students
☐ Visitors
☐ Estates / cleaning / security staff
☐ Contractors, including service engineers
☐ Young workers
☐ Immuno-compromised individuals
☐ Pregnant women or women of reproductive age

☒ Others. Please specify:
(Include names if appropriate)

Volunteers that have signed up to the Birmingham River Champions project. They've had to confirm they've read a risk assessment (F-RAMP approved) within a sign up process.

Notification method:
Groups at risk of exposure should be informed of any risk to which they may be exposed from this work activity

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(e.g. laboratory bench, fume cupboard etc.)
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☐ Other. Please specify:

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☐	HIGH:	Dry, dispersible nanomaterials or nanomaterial agglomerates / aggregates
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☐	MEDIUM:	Nanomaterials attached to a 2D surface
☐	LOW:	Nanoparticles embedded into a solid 3D matrix

Approval for low- and medium-risk work involving nanomaterials is via principal investigator. Approval for high-risk nanomaterials work granted by either by the Safety Committee or jointly by the Safety Committee and the H&S Coordinator.

Control Measures

Could the use of hazardous substances be eliminated? ☐YES ☒NO
(If so, you should do so)

Could you substitute any of these materials for less hazardous alternatives or forms? ☐YES ☒NO
(If so, you should do so)

Controls and PPE *Section 7, 8 & 15 of the Safety Data Sheet*

What controls are required for these substances?
For procedures consisting of more than 4 stages, please continue in Appendix A.

	Engineering controls	Special requirements *(e.g. special glassware; no vibration; Fluoro-plastic apparatus; no dry chemicals on heated surfaces; must be in the dark, not in spray/mist form, reduction in number of people exposed, authorised persons only)*	PPE *(PPE is a last resort and should be used in addition to all other control measures identified if the combination of these controls fails to achieve adequate control of exposure)*
Stage 1	☒ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*	Polyethylene (PE) Gloves to be worn by all trained personnel undertaking the monitoring	☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☒Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*

Stage 2	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*
Stage 3	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*
Stage 4	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*

Monitoring **Performance of control measures:**
e.g. fume hood flow rates required, maintenance, examination and testing of engineering controls, PPE, RPE

☐ **Fume cupboards and LEV:**

- A thorough examination and test at least every 14 months, in accordance with University Policy and COSHH Regulations.
- A regular, routine maintenance schedule, in accordance with University Policy.
- User checks undertaken prior to each use, in accordance with University Policy.

☒ **PPE/RPE:**

- Users should meet the requirements for PPE and RPE, as set out in University Policy, including maintenance, inspection, and testing, and suitability assessment.
- Before each period of work, users must carry out an external visual inspection of all PPE to confirm suitability for the work activity and that it is not damaged or degraded so as to impair fit or performance.
- Respirators in regular use (other than one-shift disposable) must be thoroughly examined and, where appropriate, tested at least once a month or more frequently according to circumstances. Respirators used only occasionally should be examined and tested prior to next use and maintenance carried out as appropriate. N.B. The selection of a tight fit respirator for an individual wearer must include an appropriate fit test.

☐ **Pressure vessels** (*e.g. liquid nitrogen transport dewars*):

- Regular examination, inspection and testing, in accordance with University Policy and PSSR Regulations, and a written scheme is in place where required.
- Pressure vessels are checked regularly for general condition and leakage.

☐ **Other measures not listed above** (*e.g. anemometers fitted to LEV equipment*). Please specify:

Monitoring Workplace Exposure

Will monitoring for airborne contaminants or personal monitoring be required? ☐YES ☒NO

If yes, give details:

Monitoring Health Surveillance

Is there a known health impact from this level of exposure? ☐YES ☒NO

If yes, is health surveillance required to assess whether this health impact is developing in vulnerable individuals or all people exposed? ☐YES ☒NO

If yes, please contact Workplace Wellbeing at occupationalhealth@contacts.bham.ac.uk

Instruction and Training

Are any Standard Operating Procedures (SOPs) referred to in this protocol? ☐YES ☒NO **SOP reference number(s):**

Specify training courses and/or special arrangements:

Storage and Waste Disposal

Storage

How should the materials be stored?
e.g. locked cupboard appropriately labelled and signed; stored away from other substances

Stored inside container away from non-trained individuals and wildlife.

Appropriate storage provision should be made prior to chemical purchase

Segregation *Section 10 of the Safety Data Sheet*

Is there any other chemical that these substances must not come in to contact with? Procedure in case of reaction?

N/A – there are no particular risks of reactions with other substances under normal conditions

Disposal *Section 13 of the Safety Data Sheet*

How should the substance be disposed of?
Select all those that apply

☐ **Non-hazardous** *(Disposal via standard waste stream e.g. laboratory bin or sink)*

☐ **Halogenated solvent** - *an organic solvent containing halogens, i.e., Cl, F, Br, I*
(Disposal via specialist contractor through your local Health and Safety co-ordinator)

☐ **Non-halogenated solvent** *(Disposal via specialist contractor through your local Health and Safety co-ordinator)*

☒ **Specialist hazardous waste disposal** - *including hazardous aqueous waste*
(*Disposal via specialist contractor through your local Health and Safety co-ordinator)*

☐ **Treatment**
e.g. neutralisation of hazardous waste Please detail:

Additional disposal details:
(Include 6-digit code and HP number if disposal is via external contractor and the coding is not undertaken centrally by your local H&S co-ordinator. See Health and Safety Guidance - Hazardous Waste: Guidance on Assessment.)

Excess or expired reagent should be disposed of according to local regulations via the laboratory technician or manager.

Other Precautions and Emergency Procedures

Spillages or uncontrolled release *Section 6 of the Safety Data Sheet*

How should an accidental release or spillage be dealt with?
Consider both small- and large-scale spillages and release through failure of control measures

To control the hazards:
e.g. spread absorbent material on liquid spills, location of absorbent material, eliminate sources of ignition, isolation from power supply etc.

Prevent any further spillage if safe to do so.

The product must not come into contact with surface or ground water or enter the sewage system.

Put the leaked product into a suitable secondary container.

Dispose of all waste as hazardous materials.

To protect personnel:
Protection for personnel involved in the clean-up

Gloves to be worn throughout the full procedure.

To render site of emergency safe:
Equipment needed for decontamination, clean-up etc.

Plentiful supply of clean water.

Evacuation required? ☐

First Aid *Section 4 of the Safety Data Sheet*

What should be done in the case of:

Ingestion:

Rinse mouth out with plentiful supply of water. Get medical advice/attention immediately.

Eye contact:

Rinse with plentiful supply of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention immediately if symptoms appear.

Inhalation:

Ensure surveyors are outdoors / getting fresh air away from the accident scene. First aid trained surveyors could administer artificial respiration. Get medical advice/attention immediately if symptoms appear.

Skin contact:

Take off immediately all contaminated clothing. Rinse skin with plentiful supply of water. Get medical advice/attention immediately if symptoms appear.

In the event of contamination or exposure, it is important to be able to contact a first aider without delay. Ensure you are aware of your local first aiders prior to commencement of work.

Fire Precautions *Section 5 of the Safety Data Sheet*

What actions should be taken in the event of fires involving these substances?

Cut off ignition sources and extinct by a suitable media.

The first step should be to raise the alarm BUT if a fire extinguisher is needed, what extinguisher(s) should be used? *e.g. CO_2, foam, fire blanket, Class D Powder extinguisher*	Water (mist), powder, carbon dioxide and dry sand.

Only tackle a fire if you have received training and it is safe to do so. Never put yourself at risk.

Review

Review date: *Maximum interval 3 years. Please note, some areas (including Chemistry) set a maximum review date of 1 year. Please check locally if unsure.*	**22/10/2027**

You should review your risk assessment if you think it may no longer be valid (e.g. following significant changes to hazards, such as a change in process, materials, quantities, or following an accident, incident or ill-health.)

Assessment of Risk

Is the level of risk acceptable (are hazards to health adequately controlled with control measures in place)? ☒ YES ☐ NO

Overall assessment of risk:
Taking into account the above factors, what level of risk does the procedure pose?

☐ EXTREME: likely to present *significant or permanent health effects* to the *majority of individuals*
☐ HIGH: likely to present a *significant risk* to health to the *majority of individuals*
☐ MEDIUM: may present a *significant risk* to health to a *minority of individuals*
☒ LOW: the *majority of individuals* will be unaffected with only a *minimal risk* to health
☐ INSIGNIFICANT: no foreseeable risk of injury

Declaration

Note: If working with nanomaterials, approval for low- and medium-risk work is via the Principal Investigator. Approval for high-risk nanomaterials work is to be granted by either by the Safety Committee or jointly by the Safety Committee and the Health and Safety Coordinator.

Assessor(s) Name:	Assessor(s) Signature:	Date:
James White	James White	23/10/2024

The line manager, supervisor or principal investigator should sign below to show that the assessment is a correct and reasonable reflection of the hazards and of the control measures and actions required:

Supervisor(s) Name:	Supervisor(s) Signature:	Date:
James White	James White	23/10/2024

Appendix

Appendix 1 CLP Toxicity rating

Toxicity Rating	H number and statement
1/2	H300 Fatal if swallowed H310 Fatal in contact with skin H330 Fatal if inhaled
3	H301 Toxic if swallowed H311 Toxic in contact with skin H331 Toxic if inhaled
3 (ASPT1)	H304 May be fatal if swallowed and enters airways
4	H302 Harmful if swallowed H312 Harmful in contact with skin H332 Harmful if inhaled
Not classified as toxic	

University of Birmingham
Chemical Hazard and Risk Assessment

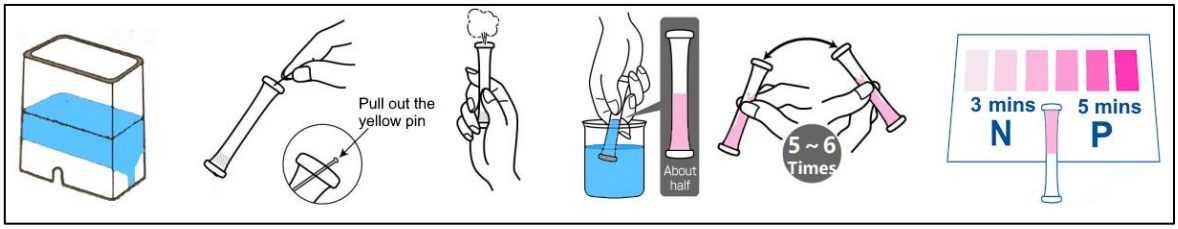
You will need the Safety Data Sheet(s) for the substance(s) to fill out this form.
Data Sheets are available from the supplier or from ChemWatch.
Refer to Health and Safety Guidance – Chemical Hazard and Risk Assessment GUIDANCE/22/CHRA/05.

Name of Assessor:	James White		
Name of Supervisor: *If applicable*			
School/Department:	Geography, Earth and Environmental Sciences		
Date of assessment:	**23/10/2024**	**Assessment number:**	

The Activity

Location of activity: *Building and room number*	Monitoring to be undertaken outdoors, working out from the Wolfson Laboratory, Biosciences
Activity assessed:	Freshwater Watch phosphate citizen science measurements using Kyoritsu packtests.

Intended use:
Give details of the procedure. You may attach a protocol / instructions. It may be useful to break the procedure down into stages (suggested maximum of 4), to facilitate consideration of risks and controls at each stage.

Stage 1	Take pin out of the top of the sealed plastic tubes containing reagents, press in and suck sample water in
Stage 2	
Stage 3	
Stage 4	

Justification:
Justification is needed for exceptionally hazardous substances. These include carcinogens, mutagen, teratogens, asthmagens and highly spontaneous reactive substances

This technique affords a cost-friendly and accurate way of measuring ammonia, which can detect sewage pollution. The toxic chemicals are well contained and the sampling will be done in the outdoors (well ventilated).

Frequency of the activity:	Monthly	**Duration:**	5-mins

Materials Involved

Include all materials used, produced and/or encountered.

Name	CAS no.	Quantity*	Form	Hazards	H numbers	H statements	WEL**	Toxicity rating***
PACKTEST Phosphate (containing Inosine, Polyethylene and 4-Aminoantipyrine	58-63-9 / 9002-88-4 / 83-07-8	140g	Powder	None	-	-	-	-

**Quantity should be the largest amount handled*
***WEL Workplace Exposure Limit (see GUIDANCE/22/CHRA/05 for further information)*
****Toxicity rating. Rated on a scale or 1 to 4 using the CLP Scale, given in Appendix 1 (see GUIDANCE/22/CHRA/05 for further information)*

Reportable substances

Do any materials involved contain the following? ☐ YES ☒ NO
H317, H334, H340, H350, H350i, nanomaterials, explosives, chemical weapons precursors, drugs precursors, ozone depleting substances, metal working fluids, used engine oils or respirable crystalline silica.
See GUIDANCE/22/CHRA/05 for additional guidance.

If you have answered 'Yes' to the above, have you reported it to Workplace Wellbeing? ☐ YES ☒ NO
Please complete and send a reportable substance notification form.

Risks

Specify risks to H&S from intended use for each stage identified above:
For procedures consisting of more than 4 stages, please continue in Appendix A.

	Possible route(s) of entry *(Select all that apply at each stage)*	Process factors influencing the risk of exposure *(Select all that apply at each stage)*	Risk implications *(Select all that apply for the procedure as a whole)*	Additional comments on the hazards associated with these substances
Stage 1	☒ In contact with skin and eyes ☒ Inhalation ☒ Ingestion ☒ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☒ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Fire or explosion risk? *If yes, include prevention.* *(Include flash points, auto-ignition temperature and/or any other relevant information.)*	
Stage 2	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Chemical reactions or thermal runaway? *If yes, include containment/ incompatibilities with other substances, hazardous decomposition products.*	
Stage 3	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Gas release or oxygen deficiency? *If yes, include control measures.*	
Stage 4	☐ In contact with skin and eyes ☐ Inhalation ☐ Ingestion ☐ Direct entry *e.g. open wounds, injection* ☐ Other (*please specify):*	☐ Weighing ☐ Spraying ☐ Pouring ☐ Addition of solid reagents ☐ Pipetting ☐ Filtering ☐ Shaking/mixing ☐ Centrifugation ☐ Use of sharps ☐ Elevated temperature ☐ High pressure ☐ Sonication ☐ Grinding ☐ Cutting ☐ Welding ☐ Other (*please specify):*	☐ Other (*please specify):*	

Persons who may be at risk:
Who is exposed to it?

☒ Departmental Staff
☐ Undergraduate students
☒ Postgraduate students
☐ Visitors
☐ Estates / cleaning / security staff
☐ Contractors, including service engineers
☐ Young workers
☐ Immuno-compromised individuals
☐ Pregnant women or women of reproductive age

☒ Others. Please specify:
(Include names if appropriate)

Volunteers that have signed up to the Birmingham River Champions project. They've had to confirm they've read a risk assessment (F-RAMP approved) within a sign up process.

Notification method:
Groups at risk of exposure should be informed of any risk to which they may be exposed from this work activity

☐ Warning notice displayed on door
☐ Warning notice displayed within work area
(e.g. laboratory bench, fume cupboard etc.)
☐ Hazards will be discussed with other workers
☐ Email notification to be sent to other workers

☐ Other. Please specify:

If nanomaterials are being used, please categorise the nanomaterial risk-level:

☐	HIGH:	Dry, dispersible nanomaterials or nanomaterial agglomerates / aggregates
☐	MEDIUM:	Nanomaterials suspended in liquids
☐	MEDIUM:	Nanomaterials attached to a 2D surface
☐	LOW:	Nanoparticles embedded into a solid 3D matrix

Approval for low- and medium-risk work involving nanomaterials is via principal investigator. Approval for high-risk nanomaterials work granted by either by the Safety Committee or jointly by the Safety Committee and the H&S Coordinator.

Control Measures

Could the use of hazardous substances be eliminated? ☐YES ☒NO
(If so, you should do so)

Could you substitute any of these materials for less hazardous alternatives or forms? ☐YES ☒NO
(If so, you should do so)

Controls and PPE *Section 7, 8 & 15 of the Safety Data Sheet*

What controls are required for these substances?
For procedures consisting of more than 4 stages, please continue in Appendix A.

	Engineering controls	Special requirements *(e.g. special glassware; no vibration; Fluoro-plastic apparatus; no dry chemicals on heated surfaces; must be in the dark, not in spray/mist form, reduction in number of people exposed, authorised persons only)*	PPE *(PPE is a last resort and should be used in addition to all other control measures identified if the combination of these controls fails to achieve adequate control of exposure)*
Stage 1	☒ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*	Polyethylene (PE) Gloves to be worn by all trained personnel undertaking the monitoring	☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☒Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*

Stage 2	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*
Stage 3	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*
Stage 4	☐ None required ☐ A recirculating fume cupboard ☐ A ducted fume cupboard ☐ A glove box ☐ Local Exhaust Ventilation ☐Other / additional control measures. Please specify: *(e.g. a purpose-built facility, other specialist enclosure, well ventilated areas)*		☐Eye protection? *(State type required:* *e.g. safety spectacles, goggles, face shield)* ☐Gloves? *(State type and thickness required, considering breakthrough times, permeation rates)* ☐Mask/RPE? *(State type of mask/ filter)* ☐Laboratory coat or other clothing? *(State type required)* ☐Other (*please specify):*

Monitoring **Performance of control measures:**
e.g. fume hood flow rates required, maintenance, examination and testing of engineering controls, PPE, RPE

☐ **Fume cupboards and LEV:**

- A thorough examination and test at least every 14 months, in accordance with University Policy and COSHH Regulations.
- A regular, routine maintenance schedule, in accordance with University Policy.
- User checks undertaken prior to each use, in accordance with University Policy.

☒ **PPE/RPE:**

- Users should meet the requirements for PPE and RPE, as set out in University Policy, including maintenance, inspection, and testing, and suitability assessment.
- Before each period of work, users must carry out an external visual inspection of all PPE to confirm suitability for the work activity and that it is not damaged or degraded so as to impair fit or performance.
- Respirators in regular use (other than one-shift disposable) must be thoroughly examined and, where appropriate, tested at least once a month or more frequently according to circumstances. Respirators used only occasionally should be examined and tested prior to next use and maintenance carried out as appropriate. N.B. The selection of a tight fit respirator for an individual wearer must include an appropriate fit test.

☐ **Pressure vessels** (*e.g. liquid nitrogen transport dewars*):

- Regular examination, inspection and testing, in accordance with University Policy and PSSR Regulations, and a written scheme is in place where required.
- Pressure vessels are checked regularly for general condition and leakage.

☐ **Other measures not listed above** (*e.g. anemometers fitted to LEV equipment*). Please specify:

Monitoring Workplace Exposure

Will monitoring for airborne contaminants or personal monitoring be required? ☐YES ☒NO

If yes, give details:

Monitoring Health Surveillance

Is there a known health impact from this level of exposure? ☐YES ☒NO

If yes, is health surveillance required to assess whether this health impact is developing in vulnerable individuals or all people exposed? ☐YES ☒NO

If yes, please contact Workplace Wellbeing at occupationalhealth@contacts.bham.ac.uk

Instruction and Training

Are any Standard Operating Procedures (SOPs) referred to in this protocol? ☐YES ☒NO **SOP reference number(s):**

Specify training courses and/or special arrangements:

Storage and Waste Disposal

Storage

How should the materials be stored?
e.g. locked cupboard appropriately labelled and signed; stored away from other substances

Stored inside container away from non-trained individuals and wildlife.

Appropriate storage provision should be made prior to chemical purchase

Segregation *Section 10 of the Safety Data Sheet*

Is there any other chemical that these substances must not come in to contact with? Procedure in case of reaction?

N/A – there are no particular risks of reactions with other substances under normal conditions

Disposal *Section 13 of the Safety Data Sheet*

How should the substance be disposed of?
Select all those that apply

☒ **Non-hazardous** *(Disposal via standard waste stream e.g. laboratory bin or sink)*

☐ **Halogenated solvent** - *an organic solvent containing halogens, i.e., Cl, F, Br, I*
(Disposal via specialist contractor through your local Health and Safety co-ordinator)

☐ **Non-halogenated solvent** *(Disposal via specialist contractor through your local Health and Safety co-ordinator)*

☐ **Specialist hazardous waste disposal** - *including hazardous aqueous waste*
(*Disposal via specialist contractor through your local Health and Safety co-ordinator)*

☐ **Treatment**
e.g. neutralisation of hazardous waste Please detail:

Additional disposal details:
(Include 6-digit code and HP number if disposal is via external contractor and the coding is not undertaken centrally by your local H&S co-ordinator. See Health and Safety Guidance - Hazardous Waste: Guidance on Assessment.)

Excess or expired reagent should be disposed of according to local regulations via the laboratory technician or manager.

Other Precautions and Emergency Procedures

Spillages or uncontrolled release *Section 6 of the Safety Data Sheet*

How should an accidental release or spillage be dealt with?
Consider both small- and large-scale spillages and release through failure of control measures

To control the hazards:
e.g. spread absorbent material on liquid spills, location of absorbent material, eliminate sources of ignition, isolation from power supply etc.

Prevent any further spillage if safe to do so.

The product must not come into contact with surface or ground water or enter the sewage system.

Put the leaked product into a suitable secondary container.

Dispose of all waste as hazardous materials.

To protect personnel:
Protection for personnel involved in the clean-up

Gloves to be worn throughout the full procedure.

To render site of emergency safe:
Equipment needed for decontamination, clean-up etc.

Plentiful supply of clean water.

Evacuation required? ☐

First Aid *Section 4 of the Safety Data Sheet*

What should be done in the case of:

Ingestion:

Rinse mouth out with plentiful supply of water. Get medical advice/attention immediately.

Eye contact:

Rinse with plentiful supply of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention immediately if symptoms appear.

Inhalation:

Ensure surveyors are outdoors / getting fresh air away from the accident scene. First aid trained surveyors could administer artificial respiration. Get medical advice/attention immediately if symptoms appear.

Skin contact:

Take off immediately all contaminated clothing. Rinse skin with plentiful supply of water. Get medical advice/attention immediately if symptoms appear.

In the event of contamination or exposure, it is important to be able to contact a first aider without delay. Ensure you are aware of your local first aiders prior to commencement of work.

Fire Precautions *Section 5 of the Safety Data Sheet*

What actions should be taken in the event of fires involving these substances?

Cut off ignition sources and extinct by a suitable media.

The first step should be to raise the alarm BUT if a fire extinguisher is needed, what extinguisher(s) should be used? *e.g. CO_2, foam, fire blanket, Class D Powder extinguisher*	Water (mist), powder, carbon dioxide and dry sand.

Only tackle a fire if you have received training and it is safe to do so. Never put yourself at risk.

Review

Review date: *Maximum interval 3 years. Please note, some areas (including Chemistry) set a maximum review date of 1 year. Please check locally if unsure.*	**22/10/2027**

You should review your risk assessment if you think it may no longer be valid (e.g. following significant changes to hazards, such as a change in process, materials, quantities, or following an accident, incident or ill-health.)

Assessment of Risk

Is the level of risk acceptable (are hazards to health adequately controlled with control measures in place)? ☒ YES ☐ NO

Overall assessment of risk:
Taking into account the above factors, what level of risk does the procedure pose?

☐ EXTREME: likely to present *significant or permanent health effects* to the *majority of individuals*
☐ HIGH: likely to present a *significant risk* to health to the *majority of individuals*
☐ MEDIUM: may present a *significant risk* to health to a *minority of individuals*
☒ LOW: the *majority of individuals* will be unaffected with only a *minimal risk* to health
☐ INSIGNIFICANT: no foreseeable risk of injury

Declaration

Note: If working with nanomaterials, approval for low- and medium-risk work is via the Principal Investigator. Approval for high-risk nanomaterials work is to be granted by either by the Safety Committee or jointly by the Safety Committee and the Health and Safety Coordinator.

Assessor(s) Name:	Assessor(s) Signature:	Date:
James White	James White	23/10/2024

The line manager, supervisor or principal investigator should sign below to show that the assessment is a correct and reasonable reflection of the hazards and of the control measures and actions required:

Supervisor(s) Name:	Supervisor(s) Signature:	Date:
James White	James White	23/10/2024

Appendix

Appendix 1 CLP Toxicity rating

Toxicity Rating	H number and statement
1/2	H300 Fatal if swallowed H310 Fatal in contact with skin H330 Fatal if inhaled
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3 (ASPT1)	H304 May be fatal if swallowed and enters airways
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Not classified as toxic	