

# COSHH Risk Assessment

## Newcastle University OHSS: H&S Form 401.1a

This form should be completed electronically and signed by the Principal Investigator or responsible person. Guidance on completing this form is provided in the [COSHH Risk Assessment section of the OHSS website](#).








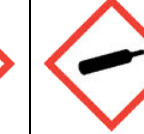
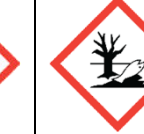
### Section 1: Project Details

<b>1.1. Title of project or activity</b>	Adjusting the pH of solutions.		
<b>1.2. Principal investigator/responsible person</b>	Dr. Arnaud Basle /Dr. Johan Panek		
<b>1.3. School/Institute/Service</b>	Newcastle University – Biosciences Institute		
<b>1.4. Location of work building and room numbers</b>	M3.032, M3.036		
<b>1.5. Brief description of work activity</b>	Adjusting the pH of solutions, buffers and media used in the laboratory.		
<b>1.6. Date of assessment</b>	03/03/2025	<b>1.7. Revision date*</b>	

### Section 2: Emergency Quick Reference

The purpose of this section is to provide easy access to emergency information. A full assessment of risk will be provided in the next sections and **completing this section last is advisable.**

<b>2.1. Emergency contacts</b> One of these should be the PI/responsible person Security can be contacted on extension 6666	<b>Name:</b>	Dr. Arnaud Basle	Dr. Johan Panek
	<b>Position:</b>	Facility Manager	Scientific officer
	<b>Telephone number:</b>	07528960883	07534980476

2.2. Hazard pictograms – select all that apply to the work activity.								
								
Health hazard	Toxic	Corrosive	Harmful/Irritant	Flammable	Oxidising	Explosive	Compressed gas	Danger for the environment
		✓	✓	✓				

2.3. Name of hazard	2.4. Properties of hazard Briefly describe how the chemical is hazardous e.g. toxic, flammable, carcinogen	2.5. Emergency procedures
		Include, as appropriate, procedures for: <ul style="list-style-type: none"> <li>• Contained Spill</li> <li>• Small uncontained spill,</li> <li>• Large uncontained spill</li> <li>• First aid</li> <li>• Fire</li> </ul>
Hydrochloric acid	Corrosive	Inhalation – may be harmful, extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion – may be harmful, causes burns. Absorption – may be harmful, causes skin and eye burns. No specific target organs.
Sodium hydroxide	Corrosive	Inhalation – may be harmful, extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion – may be harmful, causes burns. Absorption – may be harmful, causes skin and eye burns. No specific target organs.
Potassium hydroxide	Corrosive Harmful/Irritant	Inhalation – may be harmful, destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion – toxic if swallowed, causes burns. Absorption – may be harmful, causes skin/eye burns. No specific target organs.

2.3. Name of hazard	2.4. Properties of hazard Briefly describe how the chemical is hazardous e.g. toxic, flammable, carcinogen	2.5. Emergency procedures Include, as appropriate, procedures for: <ul style="list-style-type: none"> <li>• Contained Spill</li> <li>• Small uncontained spill,</li> <li>• Large uncontained spill</li> <li>• First aid</li> <li>• Fire</li> </ul>
Acetic acid	Corrosive Flammable	<p>Extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation – may be harmful, destructive to the tissue of the mucous membranes and upper respiratory tract. Ingestion – toxic if swallowed, causes burns. Absorption – may be harmful, causes skin/eye burns.</p> <p>First aid: Remove contaminated clothing and wash off skin with soap and water. Flush affected area with copious amounts of water for at least 15 minutes. If skin contact occurs take victim immediately to hospital. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If breathed in move the person to fresh air. If swallowed do not induce vomiting. Call a physician. Show the material data sheet to the physician in attendance.</p> <p>Minor spillage: Sweep up solids and transfer to appropriate container for disposal via contractor. Avoid dust formation, evacuate immediate area if necessary. Wash site of spillage thoroughly with water and detergent. Liquid spillage- contain spillage then collect with non-combustible absorbent material e.g. sand and place in suitable container for disposal via contractor. Shut off sources of electricity at the mains. Ventilate area. Do not allow chemicals to be discharged into the environment. Inform principal supervisor or other responsible person immediately.</p> <p>Fire: Hazardous decomposition products may be formed under fire conditions. In case of fire evacuate area and call 6666.</p>

Additional rows can be added to this table as required

### Section 3: The Risk Assessment

Additional rows can be added to this table as required

3.1. Name of hazard including substances and by-products produced during or as a result of the activity.	3.2. Properties of hazard Provide details of how the substance could cause harm. Useful sources of information are the safety data sheet for the substance, <a href="#">Hazard (H) statements</a> (give the whole phrase not just the code), and the <a href="#">workplace exposure limit</a> .	3.3. Physical form e.g. powder, dust, granular, pellet, liquid, solution, gas.	3.4. Quantity and concentration (give units)	3.5. Frequency of use e.g. daily, weekly, monthly, one-off.	3.6. Route of exposure e.g. ingestion, inhalation, skin/eye contact, skin absorption, injection/sharps injury.
Hydrochloric acid	H290: Corrosive to metals N/A	Solution	1M, 12M	Monthly	Inhalation Ingestion Absorption
Sodium hydroxide	H290: Corrosive to metals H314: Skin corrosion Short term exposure limit= 2mg/m3	Solution	1M, 10M	Monthly	Inhalation Ingestion Absorption
Potassium hydroxide	H290: Corrosive to metals H302: Harmful if swallowed H314: Causes severe skin burns and eye damage Short term exposure limit= 2mg/m3	Solution	3M	Monthly	Inhalation Ingestion Absorption
Acetic acid	H226: Flammable liquid and vapour. H314: Causes severe skin burns and eye damage N/A	Solution	96% (v/v), 10%is	Daily	Inhalation Ingestion Absorption

**3.7 Carcinogens** All carcinogens and users of carcinogens should be notified to OHSS using the following link

<http://www.ncl.ac.uk/ohss/chemical/carcinogens.htm>

3.8. Dangerous Substances and Explosive Atmospheres (DSEAR)	Yes	No
Are you carrying out an activity/chemical reaction that is at risk of thermal runaway or explosion?		✓
Will the activity involve handling or storage of pyrophoric or unstable substances such as peroxide?		✓
Will flammable vapours, solid particles, fibrous particles etc. capable of forming an explosive atmosphere be present in the working atmosphere?		✓
If the answer to any of the above questions is yes, you will need to complete a short 'add-on' DSEAR risk assessment		

3.9. Who might be at risk? (tick all that apply)	Staff	Postgraduates	Undergraduates	New or expectant mothers (Contact Occupational Health)	Contractors	Public including visitors and children
	✓	✓	✓			

3.10. Assessment of inherent risk to human health prior to the use of controls (please use the risk assessment matrix at the end of this form)	High	Medium	Medium/low	Low
				✓

## Section 4: Controls

Specify for each hazard identified in section 3. <a href="#">Precautionary (P) statements</a> are a useful source of information.	
<b>4.1. Physical or Engineering Controls.</b> LEV, fume hood, glove box, total containment etc. <b>Specify at which point in the work activity they are to be used.</b>	The amounts used are the smallest possible and work will be carried out within a contained area. Stock solutions will be made as needed, approx. every month, inside fume cupboard. Maximum volume of solutions made = 100ml. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
<b>4.2. Administrative controls</b> Training requirements, access control, signage.	Special instructions and training are required to safely carry out the work. Work can be carried out unsupervised after adequate training.
<b>4.3 Personal Protective Equipment.</b> Respirators, safety specs, face mask, lab coat, gloves etc. <b>Specify which type and when they are to be worn.</b>	Lab coats, gloves, goggles. Chemical resistant nitrile gloves must be worn when carrying out the experiment. Wear goggles when handling chemicals.
<b>4.4. Storage requirements</b> Include a description of how hazardous substances including flammable materials will be stored. Describe how incompatible materials will be segregated.	Chemicals stored in sealed containers on shelf.
<b>4.5. Transport of the hazardous substance</b> Describe how you will transport substances between laboratories or different university sites.	Not applicable.
<b>4.6. Disposal procedures</b> Carefully consider the safest means of disposal and identify when waste should be disposed of by a chemical waste contractor	Chemical disposal via approved contractor.

	Yes	No	Describe the findings of exposure monitoring or health surveillance
<b>4.7. Is exposure monitoring required?</b> For example if you suspect that exposure to a chemical exceeds the workplace exposure limit. Contact OHSS for further advice		✓	
<b>4.8. Is health surveillance required?</b> See <a href="#">Occupational Health surveillance policy and programme.</a> Contact Occupational Health for further advice		✓	

4.9. Assessment of residual risk to human health after the application of controls (please use the risk assessment matrix at the end of this form)	High	Medium	Medium/low	Low

## Section 5: Approval

I confirm that this is a suitable and sufficient risk assessment for the above described work activity	<b>Name</b>	<b>Signature</b>	<b>Date</b>
<b>Assessor</b> This is the person who has completed this form	<b>Dr Johan Panek</b>		<b>04/05/2025</b>
<b>Principal Investigator/responsible person</b>	<b>Dr Arnaud Basle</b>		

**Risk estimation matrix** Use this to complete sections 2.10 and 3.10

Severity of Harm	Likelihood of harm		
	High	Medium	Low
<b>Severe</b>	High	High	Medium
<b>Moderate</b>	High	Medium	Medium/low
<b>Minor</b>	Medium/low	Low	Low

**Please keep a record of this risk assessment**

### \*Review of assessment

This assessment should be reviewed every 2 years and immediately if there is reason to believe that it is no longer valid (e.g. after an accident/incident), if there is a significant change in the work activity to which it relates or if the results of monitoring or health surveillance indicate it to be necessary.