

# 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>                  | High Throughput Screening Facility robotic work                |                            |            |
| <b>1.2. Principal investigator/responsible person</b>     | Peter Banks                                                    |                            |            |
| <b>1.3. School/Institute/Service</b>                      | High Throughput Screening Facility                             |                            |            |
| <b>1.4. Location of work</b><br>building and room numbers | M2026, M2090 and M2.100a                                       |                            |            |
| <b>1.5. Brief description of work activity</b>            | Removing agar from and washing and sterilising GreenLab Plates |                            |            |
| <b>1.6. Date of assessment</b>                            | 28/10/2015                                                     | <b>1.7. Revision date*</b> | 28/10/2017 |

### 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><br>One of these should be the PI/responsible person<br>Security can be contacted on extension 6666 | <b>Name:</b>             | Peter Banks | Adrian Blackburn  |
|                                                                                                                                   | <b>Position:</b>         | ESO         | Senior Technician |
|                                                                                                                                   | <b>Telephone number:</b> | 07541238957 | 01912084963       |

| 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                                                            |
|                                                                                    |                                                                                     | X                                                                                   | X                                                                                   |                                                                                     |                                                                                      |                                                                                       |                                                                                       | X                                                                                     |

| 2.3. Name of hazard | 2.4. Properties of hazard<br>Briefly describe how the chemical is hazardous e.g. toxic, flammable, carcinogen | 2.5. Emergency procedures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
|---------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                     |                                                                                                               | Include, as appropriate, procedures for:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| Virkon powder       | Irritable to skin;<br>Serious eye damage;<br>Harmful to aquatic life;<br>respiratory Irritation               | <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|                     |                                                                                                               | <ul style="list-style-type: none"> <li>The powder should be measured out and rehydrated in 1L of water in a fume cupboard to avoid dust inhalation. The container must be sealed and transported to the location that it is required to be fully diluted in an appropriate container.</li> <li>Worse case spill of powder in the fume hood would be 50g. Mop up with dampened tissues and place in an autoclave bin. Wash area with water.</li> <li>The powder can be measure out outside of a fume hood if the user wears a face mask and safety glasses.</li> <li>In case of eye contact the affected area should be washed in water for 15 minutes before consulting a doctor</li> <li>If swallowed see medical advice immediately</li> </ul> |  |

| 2.3. Name of hazard  | 2.4. Properties of hazard<br>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>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                      |                                                                                                               | <ul style="list-style-type: none"> <li>• If Ethanol comes into contact with hands wash hands immediately with soap and plenty of water</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Virkon solution (1%) | Irritable to skin;<br>Serious eye damage;<br>Harmful to aquatic life;<br>respiratory Irritation               | <ul style="list-style-type: none"> <li>• Worse case spill of solution would be 20 litres. Absorb with a spill blanket from the Hazardous spill response kit. Place in an autoclave bag. Wash area with water.</li> <li>• Small spills (200ml or less) should be mopped up with tissues and placed in an autoclave bag. Wash affected area with water.</li> <li>• In case of eye contact the affected area should be washed in water for 15 minutes before consulting a doctor</li> <li>• If swallowed see medical advice immediately</li> <li>• If Ethanol comes into contact with hands wash hands immediately with soap and plenty of water</li> </ul> |

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<br>including substances and by-products produced during or as a result of the activity.                                                                                                                                | 3.2. Properties of hazard<br>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<br>(give units) | 3.5. Frequency of use<br>e.g. daily, weekly, monthly, one-off. | 3.6. Route of exposure e.g. ingestion, inhalation, skin/eye contact, skin absorption, injection/sharps injury. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Virkon Powder                                                                                                                                                                                                                              | Irritable to skin;<br>Serious eye damage;<br>Harmful to aquatic life; respiratory Irritation                                                                                                                                                                                                       | Powder                                                                         | 200g                                            | weekly                                                         | Medium                                                                                                         |
| Virkon Solution (1%)                                                                                                                                                                                                                       | Irritable to skin;<br>Serious eye damage;<br>Harmful to aquatic life; respiratory Irritation                                                                                                                                                                                                       | Liquid                                                                         | 20 Litres                                       | weekly                                                         | Medium                                                                                                         |
| <b>3.7 Carcinogens</b> All carcinogens and users of carcinogens should be notified to OHSS using the following link<br><a href="http://www.ncl.ac.uk/ohss/chemical/carcinogens.htm">http://www.ncl.ac.uk/ohss/chemical/carcinogens.htm</a> |                                                                                                                                                                                                                                                                                                    |                                                                                |                                                 |                                                                |                                                                                                                |

| 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?                                              |     | x  |
| Will the activity involve handling or storage of pyrophoric or unstable substances such as peroxide?                                             |     | x  |
| Will flammable vapours, solid particles, fibrous particles etc. capable of forming an explosive atmosphere be present in the working atmosphere? |     | x  |
| 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?<br>(tick all that apply) | Staff | Postgraduates | Undergraduates | New or expectant mothers (Contact Occupational Health) | Contractors | Public including visitors and children |
|-----------------------------------------------------|-------|---------------|----------------|--------------------------------------------------------|-------------|----------------------------------------|
|                                                     | x     | X             | X              |                                                        |             |                                        |

| 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 |
|------------------------------------------------------------------------------------------------------------------------------------------------|------|--------|------------|-----|
|                                                                                                                                                |      | X      |            |     |

## 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><br>LEV, fume hood, glove box, total containment etc. <b>Specify at which point in the work activity they are to be used.</b>                  | A fume hood is advisable but not essential.                                                                                                                                                              |
| <b>4.2. Administrative controls</b><br>Training requirements, access control, signage.                                                                                                      | New Staff and Students should be trained how to make up the Virkon Solution and its correct disposal                                                                                                     |
| <b>4.3 Personal Protective Equipment.</b><br>Respirators, safety specs, face mask, lab coat, gloves etc. <b>Specify which type and when they are to be worn.</b>                            | Rubber Gloves, a lab coat, a face mask and safety glasses should be used for measuring out the Virkon powder. Rubber gloves, a lab coat and safety glasses should be worn when handling Virkon solution. |
| <b>4.4. Storage requirements</b><br>Include a description of how hazardous substances including flammable materials will be stored. Describe how incompatible materials will be segregated. | Virkon Powder is stored in a sealed plastic container under the sink. Virkon solution is kept in a large plastic receptacle next to the sink in <b>room</b> .                                            |
| <b>4.5. Transport of the hazardous substance</b><br>Describe how you will transport substances between laboratories or different university sites.                                          | Virkon powder should be carried in sealed plastic container. Liquid Virkon should be transported in a sealed Duran bottle.                                                                               |
| <b>4.6. Disposal procedures</b><br>Carefully consider the safest means of disposal and identify when waste should be disposed of by a chemical waste contractor                             | Tissues, masks and gloves are sent for autoclaving. Waste Virkon solution can be washed down sink with copious quantities of water.                                                                      |

|                                                                                                                                                                           | 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 |     | X  |                                                                     |
| <b>4.8. Is health surveillance required?</b> See <a href="#">Occupational Health surveillance policy and programme</a> . Contact Occupational Health for further advice   |     | X  |                                                                     |

| 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>Principal Investigator/responsible person</b>                                                       |             |                  |             |

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

| Severity of Harm | Likelihood of harm |        |            |
|------------------|--------------------|--------|------------|
|                  | High               | Medium | Low        |
| Severe           | High               | High   | Medium     |
| Moderate         | High               | Medium | Medium/low |
| Minor            | 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.