**GENERAL RISK ASSESSMENT FORM - SCIENCE**

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| **Student/researcher name** |  | **Supervisor name** |  |
| **Title of risk assessment/work being assessed** |  | | |
| **Location of work (Campus, building, room)** |  | **Date of assessment** |  |

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| **Brief description of work being assessed**  Include brief details of stages of the process, numbers of people involved, scale of operation, duration, timing and frequency of work (attach protocol or method if preferred) |
| Please include the following headings (text in red is a reminder or example of what should be included under that heading, so the red text itself does not need to remain):  **Brief protocol:** include main chemicals, equipment and processes to be used (NB A more detailed protocol can be attached at the end of the assessment)  **Scale:** give an indication of the quantities of chemicals involved, eg mL/g or L/kg  **People involved:** give names of student(s) and supervisor(s) including any PhD students/Post Docs  **Duration and timing of work**: indicate when work is to take place, eg Mon–Fri, 9 am – 5 pm, from October 2018 until April 2019 |
| **Things to consider within the assessment – this list may not be exhaustive** |
| **Key lab hazards to consider are:** Chemical 🞏 Biological 🞏 Laser 🞏 Nanomaterials 🞏 Radiological 🞏 Gas cylinders 🞏 Electrical 🞏 Cryogen 🞏 Glassware 🞏 Manual handling 🞏 Slips/trips 🞏 Lone working 🞏 Out of Hours working 🞏 (NB This list is not exhaustive so please also refer to list below.)   * **Personal safety** e.g. Physical or verbal attack; disability or health problems; delayed access to personal or medical assistance; failure of routine or emergency communications; security of accommodation and support; getting lost, or stranded by transport; cultural or legal differences - List aspects of the work with significant hazards, and give brief details of how foreseeable harm/injuries could occur * **Equipment hazards** **- Storage, handling and use of equipment and materials** e.g. Tools; machinery; vehicles; manual handling; noise; work at height; electricity; fire; vacuum; high pressure; high temperature; ultra violet; laser; vibration - List equipment and materials with significant hazards, and give brief details of how foreseeable harm/injuries could occur * **Biological hazards - Storage, handling, use, and disposal of biological agents, intermediates, products and waste, "any micro-organism, cell culture or human endoparasite including any which have been genetically modified, which may cause infection, allergy, toxicity and other hazards to human health". This includes bacteria, viruses, fungi and parasites. Include routes of exposure** e.g. Blood borne infection; skin contact, skin sensitisation; sensitisation by inhalation; toxic by ingestion or inhalation. List biological agents with significant hazards, and give brief details of hazard classification and foreseeable harm/injuries * **Natural physical hazards - Effects of the natural environment, climate, landscape, plants, animals** e.g. Extreme weather; earthquakes and volcanoes; mountains, cliffs and rock falls; glaciers, crevasses and icefalls; caves, mines and quarries; forests including fire; marshes and quicksand; fresh or seawater, tidal surges * **Environmental impact** e.g. Pollution and waste, deposition of rubbish, disturbance of eco-systems, trampling, harm to animals or plants * **Chemical hazards - Storage, handling, use, and disposal of chemical reagents, intermediates, products and waste** e.g.Toxic by inhalation or ingestion; irritant; corrosive, flammable; explosive; oxidising; radioactive. Include routes of exposure e.g. skin contact; skin sensitisation; sensitisation by inhalation; toxic by ingestion or inhalation. ***If the chemical is a group 3 or 4 chemical (see RA guidance sheet) then a separate COSHH assessment MUST by carried out.*** |

**Risk Assessment:**

| **Description of Hazard**  (only include significant hazards inherent within the task or the activity) | **Person(s) at risk**  e.g. staff, students, visitors, new & expectant mothers etc. | **Current control measures in place** | **Current risk rating** | | |
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| Likelihood | Severity/ impact | Risk Rating |
| **TEMPLATE FOR PERSONAL SAFETY: (new row for each item)**  **Name of issue**  eg: lone working, out of hours working, slips/trips/falls, illness/allergies/disabilities  Key hazards: eg:   * Lone/out of hours working – risk of injury or illness that is not discovered until the next working day | Researcher | 1. **Precautions**   Must adequately eliminate/reduce the risk of each of the key hazards specified | # | # | # |
| **TEMPLATE FOR CHEMICALS: (new row for each chemical)**  **Name of chemical substance**  Form: solid/liquid (delete as applicable)  Concentration: if relevant, eg for acids  Quantity: if possible state max amount likely to be used  Key hazards: (identified from safety data sheet) eg:   * Flammable * Toxic by inhalation * Corrosive * Infectious   COSHH group 🞏 (state number from 1–4)  If group 3 or 4, then additional COSHH assessment is required and must be added attached to end. See Appendix 2 for definitions.  Don’t forget to include reagents, intermediates, mixtures and products. | Use a phrase such as “Researcher and other lab users/ visitors” | 1. **Precautions**   Must adequately eliminate/reduce the risk of each of the key hazards specified   1. **First aid steps**  * Eye contact * Skin contact * Inhalation * Ingestion  1. **Storage**   Where the chemical substance should be stored, eg fridge, flammable storage cabinet   1. **Spillage**   What to do in the event of a small (few drops) or larger spill   1. **Disposal**   Where waste material should be disposed of, eg non-halogenated waste bottle or dispose via autoclave or in suitable, closed, labelled container | # | # | # |
| **TEMPLATE FOR BIOLOGICALS: (new row for each biological)**  **Name of biological substance**  Hazard grouping 🞏 (state class from 1–4)  See Appendix 3 for definitions. |  | 1. **Precautions**   Must adequately eliminate/reduce the risk of contamination/infection, and include disinfection procedures   1. **Storage**   Where the biological substance should be stored, eg fridge, freezer   1. **Spillage**   What to do in the event of a small (few drops) or larger spill   1. **Disposal**   Where waste material should be disposed of, eg via autoclave | # | # | # |
| **TEMPLATE FOR EQUIPMENT: (new row for each item)**  **Name of equipment**  For heating/cooling equipment, indicate temperature range, eg 40 °C or 400 °C?  Key hazards: (identified from equipment manuals) eg:   * Burns * Eye/skin damage from laser   Don’t forget to include electrical hazards and glassware. | Use a phrase such as “Researcher and other lab users/ visitors” | 1. **Precautions**   Must adequately eliminate/reduce the risk of each of the key hazards specified   1. **First aid steps**   Please add in if appropriate, eg for burns in the case of heating equipment | # | # | # |
| **TEMPLATE FOR COMPRESSED GASES: (new row for each gas)**  **Name of gas**  Supply: piped/cylinder (delete as applicable)  Key hazards: (identified from equipment manuals) eg:   * Asphyxiation * Explosion * Injury from falling cylinder   Don’t forget to include hazards relating to the gas itself (eg asphyxiation) and the cylinder in which it is contained (eg risk of injury when handling cylinders). | Use a phrase such as “Researcher and other lab users/ visitors” | 1. **Precautions**   Users must follow safe practices as specified in the Hazardous Materials & Safety Handbook (available on Science Health and Safety Moodle page).   1. **First aid steps**   If applicable   1. **Storage**   Where and how the gas cylinder should be stored/located.   1. **Leaks**   What to do in the event of a leak | # | # | # |
| **TEMPLATE FOR ADDITIONAL FORENSIC/ENVIRONMENTAL SCIENCE HAZARDS: (new row for each item)**  **Name of issue**  eg: travelling to/between sites, rain/snow/cold weather, external contamination of soil/water bodies, animal/insect bites, Weil’s/Lime Disease, exposure to toxic algae, environmental contamination  Key hazards: eg:   * Contracting Lime Disease from tick bite | Use a phrase such as “Researcher, colleagues and public” | 1. **Precautions**   Must adequately eliminate/reduce the risk of each of the key hazards specified   1. **First aid steps**   If applicable | # | # | # |
| **TEMPLATE FOR ADDITIONAL HAZARDS: (new row for each item)** | Use a phrase such as “Researcher and other lab users/ visitors” | 1. **Precautions**   Must adequately eliminate/reduce the risk of each of the key hazards specified | # | # | # |
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**Sources of information**

| **Source of information**  eg chemical safety data sheet, instrument manual – please give web link and access date where possible |
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| **Person(s) completing this assessment:** (Person carrying out or managing the activity day-to-day) | | | | | | | |
| Name |  | Position |  | Signature |  | Date |  |
| **Other person(s) commenting on this assessment (where required under Faculty/Directorate arrangements)** (Line Manager or Supervisor responsible for the activity, others involved in the decision-making process, others advising on the activity eg Health & Safety Manager, Health & Safety Local Officer) | | | | | | | |
| Name |  | Position |  | Signature |  | Date |  |
| **Person approving this assessment:** (Person with overall responsibility for the activity e.g. Faculty Operating Officer/Director of Professional Service, Senior Academic or Manager) | | | | | | | |
| Name |  | Position |  | Signature |  | Date |  |

**Review of assessment, and revision if necessary**

(For continuing work: the assessment must be reviewed for each visit in a series; when there are significant changes to work materials, equipment, methods, location or people involved; and if there are accidents, near misses or complaints associated with the work. If none of these apply, the assessment must be reviewed at least annually)

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| REVIEW DATE | --/--/---- | --/--/---- | --/--/---- | --/--/---- |
| Name of reviewer |  |  |  |  |
| Signature |  |  |  |  |
| No revisions made |  |  |  |  |
| Changes to activity, hazards, precautions or risks noted in text. |  |  |  |  |

Appendix 1 – Risk Matrix

The hazards identified within the risk assessment should be assigned a risk rating – this should be assigned for any control measures which are currently in place and any further control measures which will be required.

You should assign a value for the likelihood of an incident occurring based on the hazard from 1 to 5 and a value for the severity / impact of the hazard from 1 to 5. These should then be multiplied together to give a final risk rating e.g. 3 x 2 = 6.

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| **IMPACT** | **5**  **CATASTROPHIC** | **5** | **10** | **15** | **20** | **25** |
| **4**  **MAJOR** | **4** | **8** | **12** | **16** | **20** |
| **3**  **SERIOUS** | **3** | **6** | **9** | **12** | **15** |
| **2**  **MODERATE** | **2** | **4** | **6** | **8** | **10** |
| **1**  **MINOR** | **1** | **2** | **3** | **4** | **5** |
|  | **1**  **RARE** | **2**  **UNLIKELY** | **3**  **POSSIBLE** | **4**  **LIKELY** | **5**  **ALMOST CERTAIN** |
|  |  | **LIKELIHOOD** | | | | |

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| **Risk score = likelihood** of the hazard to cause harm x **impact** | | |
| **High** | **Medium** | **Low** |
| **Rating 15 or more**  Immediate action is required to control and/or lower the level of risk. Exposure to the identified hazard is prohibited or severely restricted. | **Rating 8 - 12**  Urgent review of the equipment, activities, system of work within the workplace with the aim of lowering the risk to the next level. | **Rating 1 – 6**  Usually, no further action will be required except for monitoring to ensure the risk does not change. However, if it is possible to reduce the risk levels still further, by using controls that are “reasonably practicable”, then this should be done. |

Appendix 2 – COSHH Assessments

The Control of Substances Hazardous to Health (COSHH) 2002 regulations require a COSHH assessment for the possession or use of hazardous chemicals, which must be completed before work begins. The University COSHH form is separate to this University Risk Assessment form and is designed to capture all the additional unique hazards associated with chemical usage.

Not all chemicals require a COSSH assessment. In order to decide whether or not a COSHH form is required for a particular chemical, in the School of Science, chemicals are allocated to one of four hazard groups:

Group 1 – Chemicals having no significant or established hazard.

Group 2 – Chemicals termed harmful/irritant or corrosive.

Group 3 – Chemicals termed toxic or which may be carcinogenic, teratogenic, etc.

Group 4 – Chemicals termed very toxic or which are known to be carcinogenic, teratogenic or mutagens.

In general, chemicals that fall into Group 1 or 2 do not need a COSHH form but Group 3 and 4 chemicals do need a COSHH form. There are some exceptions to this, eg sensitizers require a COSHH form regardless of which Group they fall into. Please see the Hazardous Materials & Safety Handbook for further guidance and for details of where to find the COSHH form.

Appendix 3 – Biological substances

Biological substances are divided into four hazard groupings:

Group 1 – Unlikely to cause human disease.

Group 2 – Can cause human disease and may be a hazard to employees; it is unlikely to spread to the community and there is usually effective prophylaxis or treatment available.

Group 3 – Can cause severe human disease and may be a serious hazard to employees; it may spread to the community, but there is usually effective prophylaxis or treatment available.

Group 4 – Causes severe human disease and is a serious hazard to employees; it is likely to spread to the community and there is usually no effective prophylaxis or treatment available.