|  |  |
| --- | --- |
| **(1) Emergency contact details:** Click or tap here to enter text. | **Firefighting medium:** Choose an item. |
| **The following services are being used:** **ELECTRICITY** [ ]  **WATER** [ ]  **GASES** [ ]  **OTHER** Click or tap here to enter text. |
| **Action in case of fire:** Secure experiment if safe to do so: Turn power off, bring equipment to a safe position, close lab doors.**If needed:** sound the alarm and evacuate. Call Campus Security on 0161 306 9966 immediately. Report to supervisor/manager and a Safety Advisor. **Additional information specific to this task, not covered by the above:** Click or tap here to enter text. | **Spillage or release measures:** Remove all sources of ignition. **Small spills:** Stop leak if without risk and move adjacent containers from spill area. Dilute with water and mop if water-soluble. Clean fluids using gloves and robust lab tissue (inert, clean, dry) and dispose to chemicals waste container. Decontaminate area. **Large spills:** Stop leak if without risk and move adjacent containers from spill area. Use hazardous spill kit in the lab to absorb liquid. Use appropriate tools to put the spilled content in a convenient container for disposal. Decontaminate area. **For significantly large spills:** cordon off affected area. Notify colleagues and Supervisor. Evacuate if necessary. **Incident Reporting:** All incidents must be reported to a Safety Advisor and supervisor/manager. **Additional information specific to this task, not covered by the above:** Click or tap here to enter text. |
| **First aid requirements:** Call a First Aider and take provisions from the 1st aid station in the lab. If needed call medical help and show safety data sheet. **Protection of First Aider:** No action shall be taken involving any personal risk or without suitable training. In cases where it may be dangerous to give mouth-to-mouth resuscitation, carry out chest compressions only. Wash contaminated clothing thoroughly with water before removing it, or wear appropriate gloves. **Accident Reporting:** Accidents or near misses should be reported to Safety Advisor and Supervisor.**Inhalation:** Move exposed person to fresh air. Keep person warm and at rest. If unconscious, place in recovery position and seek medical attention immediately. Loosen tight clothing such as collar, tie, belt, or waistband. Get medical help if the person’s condition worsens.**Ingestion:** Wash out mouth with water. Move the exposed person to fresh air. Keep person warm and at rest. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and obtain medical attention immediately. Maintain an open airway. Loosen any clothing such as collar, tie, belt or waistband. Seek medical help. **Skin contact:** Flush with running water for at least 20mins. For corrosives substances have to hand and apply Diphoterine spray to neutralise the chemical burn, do not rinse Diphoterine off. Wear gloves to remove contaminated clothing and shoes. Use emergency shower if there is one nearby and the burn is significant. Seek medical help if symptoms persist. **Eye contact:** Flush eyes with sterile eyewash for at least 20mins, lifting upper and lower eyelids. Remove contact lenses if present and easy to do so. For corrosives substances apply Diphoterine eyewash to neutralise the chemical burn. Keep rinsing. Seek medical help if symptoms persist. **Additional information specific to this task, not covered by the above:** Click or tap here to enter text. |
| **(2) Assessment reference number:** Click or tap here to enter text. | **(3) Name and status of assessor e.g. UG, PGR, Staff:** Click or tap here to enter text. | **(4) Building and laboratory number:** Click or tap here to enter text. |
| **(5) Assessment date:** Click or tap to enter a date. | **(6) Review/expiry date:** Click or tap to enter a date. | **(7) People affected:** Click or tap here to enter text. |
| **(8) Title of procedure:** Click or tap here to enter text. | **(11) Associated assessments and reference numbers e.g. general, activity, laser, BioCOSHH, radiological:**Click here to enter text. |
| **(9) Details of procedure and any reaction scheme (Including starting materials, products/by-products and pressure):**Click here to enter text. |  |
| **(10) Duration, frequency, and temperature Range:** Click or tap here to enter text. |
| **(12) Name of substances used and produced** | **(13) Quantity used and handled** | **(14) Hazard symbols** | **(15) Physical and health hazard statements** | **(16) Workplace exposure limits** | **(17) Control Measures** | **(18) Disposal Route** | **(19) Extremely or Highly Flammable** |
| *Include CAS number* | *Include stock volume* | *Section 2 of the SDS* Icon  Description automatically generated with low confidenceIcon  Description automatically generatedA picture containing text, clock  Description automatically generatedA picture containing text, clipart  Description automatically generatedIcon  Description automatically generatedA picture containing text, clipart  Description automatically generatedIcon  Description automatically generatedA picture containing text, clipart  Description automatically generatedA picture containing text, clipart  Description automatically generated | *Section 2 of the SDS, include full code and statement* | *Section 8 of the SDS, include both TWA and STEL from UK EH40* | ***Engineering controls*** *- e.g. LEV, fume cupboard****Storage*** *– e.g. flammables cabinet****PPE*** *– Section 2 of the SDS***Conditions to avoid** – S*ection 10 of the SDS***Incompatibilities** – S*ection 10 of the SDS* | *e.g. collect hazardous liquid waste in 10L bottle until ¾ full, then dispose of through stores*  |[ ]
| 1.  |  |  |  |  |  |  |  |
| 2.  |  |  |  |  |  |  |  |
| 3. |  |  |  |  |  |  |  |
| 4. |  |  |  |  |  |  |  |
| **(20) Operation type (mark as appropriate): Open** [ ]  **Closed** [ ]  **Pressurised** [ ]  **Pressure relief system** [ ]  **Other** [ ]  |
| **(21) Are you carrying out an activity/chemical reaction that is at risk of a thermal runaway or explosion?** Choose an item.**If yes, what additional controls are required?** Click or tap here to enter text. |
| **(22) Will the activity involve handling or storage of pyrophoric or unstable substances such as peroxide?** Choose an item.**If yes, what additional controls are required?** Click or tap here to enter text. |
| **(23) Will flammable vapours, solid particles, fibrous particles etc. capable of forming an explosive atmosphere be present?** Choose an item.**If yes, what additional controls are required?** Click or tap here to enter text. |
| **(24) Can less hazardous substances be used?** Choose an item. |
| **(25) Procedure for checking effectiveness of control measures:** Click or tap here to enter text. |
| **(26) If Carcinogens, mutagens or reproductive toxins (CMR), skin sensitisers, respiratory sensitisers, occupational asthmagens or nanoparticles are listed, is the fitness to work certificate for everyone still valid?** Choose an item. | **(27) If any of the Substances above are highly flammable and extremely flammable, what control measures are in place?** Choose an item. |
| **(28) Is lone working permitted?** Choose an item.**If yes, what additional controls are required?** Click or tap here to enter text. | **(29) Is out of hours working permitted?** Choose an item.**If yes, what additional controls are required?** Click or tap here to enter text. |
| **(30) Additional control measures or relevant information** Choose an item. |
| **(31) Risk rating of the experiment:** Choose an item. |
| **(32) Result:** Click or tap here to enter text. |
| **(33) Assessor:** Click or tap here to enter text. | **(34) Approver:** Click or tap here to enter text. |
| ***If using any chemicals classed as a Poison, Drug Precursor, Explosive or Chemical Weapon, prior notification must be given to the School Safety Advisor as compliance procedures apply, please see*** [***here***](https://www.staffnet.manchester.ac.uk/compliance-and-risk/compliance/) ***for more details.*** |

Guidance notes

* The purpose of this Chemical Risk Assessment (CRA) is to assess the hazards to health, and other identified hazards and risks, associated with the use of chemicals and other hazardous substances and to put into place suitable control measures to enable work to proceed safely.
* General risk assessments for the procedure will be required to accompany this CRA.
* Put in as much relevant detail as possible for all the sections (if appropriate use continuation pages. You must assess both the risks to yourself and others in the working environment.
* If you are unsure about any aspect of the activity, then seek advice from your supervisor or someone who has suitable expertise in that area.
* All CRAs must be approved by a supervisor and in some cases verified/checked by a Safety Advisor **in advance** of starting the work, i.e. during the planning stage of the work, not the day before. You must check the approval procedure applicable in your School.
* Live CRAs must be kept local to the activity in accordance with local School procedures. On occasion, you may be asked to discuss your work and the associated risk assessments. Should this prove to be unsatisfactory, you may be asked to resubmit your assessments. You must check the procedure applicable to your School.
* They must be reviewed at least annually or when significant changes occur.
* Any risk assessments not completed correctly will result in repeat submission, and consequently a delay in commencing your work

Each section of the form has a number. Please see the table below for guidance.

The SDS used in this guidance is from Sigma Aldrich - [www.sigmaaldrich.com/united-kingdom.html](http://www.sigmaaldrich.com/united-kingdom.html)

|  |  |
| --- | --- |
| 1 | In case of Emergency |
| Services used | Tick as appropriate and detail gases (E.g. electricity, water, gases, others) |
| Action in case of Fire | Provide instructions on what to do in the event of a fire. Consult local arrangements and information from applicable SDS |
| First aid requirements | Specify first aid instructions. Consult local arrangements and information from applicable SDS |
| Spillage and release measures | Provide instructions on what to do in the event of spillage or release of substances for both the activity and any stored. |
| Fire Fighting Medium | Specify the type required: CO2, Powder, Foam, Water or Other as applicable. Consult local arrangements and information from applicable SDS |
| 2 | Risk Assessment Number/Code | If not applied automatically this needs to be assigned by the safety advisor. You must check the procedure within your School. |
| 3 | Assessor’s name and status | Enter details of the person completing the assessment. Enter Status e.g. Academic supervisor, PDRA, PhD, MSc etc. |
| 4 | Building and laboratory number | Location of where the activity will take place. |
| 5 | Assessment Date | Date of assessment |
| 6 | Review/Expiry Date | Date when the assessment needs to be reviewedThis should be at least annually or when significant changes occur**.** |
| 7 | People Affected | Detail any co-workers otherwise detail groups of people such as; other lab users, cleaners etc. |
| 8 | Title of procedure | Insert the title of your activity. |
| 9 | Details of procedure | List the steps or outline what the activity is. Be specific and include significant hazards (E.g. Starting materials, products/by-products, temperature range, pressure, compressed gases, use of machinery etc. Schematic diagram of the chemical reaction should be used if appropriate )  |
| 10 | Duration, Frequency and temperature range: | Length of the activity (e.g. 30mins, 2 hrs), how frequently it is performed (e.g. once a day, once a week) and the range of temperature to be used. (e.g. 100 – 120 °C) *Note: the temperature must be in °C for wider comprehension.* |
| 11 | Associated Assessments and Ref | Other risk assessments, e.g. general, biological and references for the procedures that the chemicals are used, e.g. SOP. Provide all relevant reference numbers. |
| 12 | Substances used and produced | Insert name of all the hazardous substances to be used in the experiment, including the physical form and CAS numbers (*SDS Section 1)* |
| 13 | Quantities used and handled | Insert quantity and concentration of each substance used and handled/stored (e.g. mg, g, %) |
| 14 | Hazard Symbols | Select the applicable Hazard Pictogram for each substance *(SDS Section 2) Note: If you are working on the word for mac, then you will not be able to select the pictogram. In this instance copy the pictogram from the bottom of the document into place holders.* |
| 15 | Physical and health hazard statements | Insert H codes and Hazard Statements for each substance *(SDS Section 2)* |
| 16 | Workplace Exposure Limits | Specify Time Weighted Average (TWA) and Short Term Exposure Limit (STEL) for each substance if applicable *(SDS Section 8)* |
| 17 | Control Measures | Specify the location of where each substance is stored (e.g. lab bench, fridge, flammables cabinet). Consider incompatibilities. A*lso, consult SDS Section 7 & 10* |
| Fume Cupboard or Glove BoxSegregation (Specify) Other Extraction (Specify)Lab Coat (identify type)Safety Glasses (BS EN 166), Goggles (BS EN 166) or Face Visor (BS EN 166)Gloves (BS EN 374)- Specify type and thickness *(SDS Section 8, Splash Contact)*Buddy System (Specify)Others (Specify) |
| Specify the conditions to avoid while using the substances, e.g. avoid moisture, heat, sparks *(SDS Section 10)* |
| Specify (i) substances in the experiment that are incompatible with each other and the controls to be used where appropriate.(ii) all other substances the chemicals should not be mixed with or be stored with *(SDS Section 10)* |
| 18 | Disposal Route | Specify on how to dispose of the waste produced, e.g. Non-hazardous waste, Hazardous Solid, Hazardous Liquid, Halogenated, Organic, and Heavy MetalIf collecting hazardous waste, specify how this is carried out and the controls required. For example, collect in a suitable waste disposal container, do not fill more than ¾ full and do not mix with incompatible materials. Label container with user names, chemicals, concentration and date. Store in designated area away from sources of ignition and direct sunlight. Vent the container periodically to prevent build-up of fumes. Do not accumulate chemical waste.  |
| 19 | Extremely or Highly Flammable? | If your substance meets either statement below tick the box on the CRA.**Extremely flammable**Liquids which have a flashpoint lower than 0°C and a boiling point (or, in the case of a boiling range, the initial boiling point) lower than or equal to 35°C.**Highly flammable**Liquids which have a flashpoint below 21°C but which are not extremely flammable.This information can be found in the (*SDS Section 9)* |
| 20 | Operation type | Specify if the procedure will be open/ closed/ pressurised/ using pressure relief system/ other or N/A |
| 21 | Risk of thermal runaway | Specify if the activity/chemical reaction is at risk of a thermal runaway or explosion. If yes, provide details of the additional controls  |
| 22 | Pyrophoric or peroxide | Specify if the activity involves the use of pyrophoric or other unstable substances. If yes, provide details of the additional controls |
| 23 | Risk of an explosive atmosphere | Specify if the substances used or the activity has the potential of forming an explosive atmosphere. If yes, provide details of the additional controls. Calculations may be required to demonstrate and should be entered here if appropriate. Consult the Lower Explosive limit for this information *(SDS Section 9)*. |
| 24 | Can less hazardous substances be used? | State if you can replace with less hazardous substances |
| 25 | Procedure for checking the effectiveness of control measures | Specify checking procedures (E.g. How to ensure LEV is working effectively; What to do if the gloves become contaminated) |
| 26 | CMRs, Sensitisers, Asthmagens & Nanoparticles | Specify if any substance used is a CMR, sensitiser, asthmagen or nanoparticle *(SDS Section 2)*Please confirm that a fitness to work certificate is up to date for all those affected by selecting “Yes”. If not, select “No” and ensure Occupational Health is informed of the additional substances being used. If an individual doesn’t already have a fitness to work certificate, they will need to complete the [Lab Screen Questionnaire](http://documents.manchester.ac.uk/display.aspx?DocID=12133) and return it to Occupational Health. |
| 27 | If any of the Substances above are Highly flammable and Extremely Flammable, What control measures are in place? | If the Highly flammable and Extremely Flammable box is selected for a substance, you must detail the control measures to prevent ignition. |
| 28 | Lone working | Specify additional controls if the activity is permitted for lone working. You must check the procedure at your School. |
| 29 | Out of hours working | Specify additional controls if the activity is permitted for out of hours working. You must check the procedure within your School. |
| 30 | Additional control measures | Outline hazards from any reaction (e.g. exothermic, fumes, toxic gases) that may arise during the process and detail how these will be controlled.Specify any additional control measures or relevant information associated with the activity |
| 31 | Risk Rating | On a rating of Likelihood vs Consequence, how would you score the residual risk of the experiment with all control measures in place? This Low, Medium or High.Use the image below to help visualise this.  |
| 32 | Result | **T = trivial risk**.  Use for very low risk activities to show that you have correctly identified a hazard, but that in the particular circumstances, the risk is insignificant.   **A = adequately controlled, no further action necessary.**   If your control measures lead you to conclude that the risk is low, and that all legislative requirements have been met (and University policies complied with), then insert A in this column. **N = not adequately controlled, actions required**. Sometimes, particularly when setting up new procedures or adapting existing processes, the risk assessment might identify that the risk is high or medium when it is capable of being reduced by methods that are reasonably practicable.  In these cases, an action plan is required.  The plan should list the actions necessary, who they are to be carried out by, a date for completing the actions, and a signature box for the assessor to sign off that the action(s) has been satisfactorily completed.  Some action plans will be complex documents; others may be one or two actions that can be completed with a short timescale. **U = unable to decide. Further information required.**  Use this designation if the assessor is unable to complete any of the boxes, for any reason.  Sometimes, additional information can be obtained readily (eg from equipment or chemicals suppliers, specialist University advisors) but sometimes detailed and prolonged enquiries might be required.  Eg is someone is moving a research programme from a research establishment overseas where health and safety legislation is very different from that in the UK.   **For T and A results**, the assessment is complete.  **For N or U results**, more work is required before the assessment can be signed off.   |
| 33 | Signature of Assessor | Signed by the person completing the assessment. You must check the procedure within your School. |
| 34 | Signature of Approver | Signed by the Academic Supervisor approving the work. You must check the procedure at your School. |

