**Reaction Risk Assessment Form Reaction Number:** 5CCC0051 - X

Below give a scheme for any reaction being carried out and write the full procedure including work-up, purification methods and full method for any analysis of qualitative tests to be carried out (*e.g.* chromatography, TLC, NMR, IR or test tube reactions). You must also give details of the procedure for any preparation of solutions you will need to carry out for the experiment (e.g. acid/base or TLC stain solutions, cold baths). Use the form below to assess the risks associated with **ALL** the reaction and process conditions (*e.g.* heating, cooling, vacuum), particular hazards (*e.g.* exotherm, gas evolution, flooding, asphyxiation, burns—hot or cold, explosion, needle stick injuries), quench procedures and waste disposal as well as the chemicals to be used, including your expected product, solvents and known by-products.

**Reaction details:**

| Complete the following table for all reagents, solvents and materials used in the experiment (e.g. including drying agents, chromatography stationary phase etc.). | | | | | | Chemical hazards and routes of exposure (Route of exposure: 1, Inhalation; 2, Skin/eye contact; 3, Swallowing) | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carcinogen, teratogen, mutagen | Very toxic/toxic | Harmful/irritant | Explosive | Pyrophoric | Highly flammable/flammable | Oxidising | Corrosive | Lachrymator | Other (specify): |
| **Compound** | **FW** | **d (g/mL)** | **Quantity** | **mmol** | **Eq** |  |  |  |  |  |  |  |  |  |  |
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| **Repeat experiment?** (This lab book only) NO | | | | | | | | | | | | | | | |
| **New Experiment:** Category (please tick one) | | | | | | | | **A** ✓ | | **B** | | **C** | | | **D** |
| **Standard protocol followed?** (Please give reference) 5CCC0051 lab manual | | | | | | | | | | | | | | | |
| **Reaction conditions/processes and associated hazards:** Complete the table below with all reaction conditions (e.g. heating, cooling, vacuum) and associated physical hazards (e.g. exotherm, gas evolution, flooding, asphyxiation, burns—hot or cold, explosion, needle stick injuries). | | | | | | | | | | | | | | | |
| **Reaction condition process** | | | | | | **Physical hazards associated** | | | | | | | | | |
| Working at increased temperatures | | | | | | Risk of burns | | | | | | | | | |
| Working with vacuum systems for filtration | | | | | | Risk of implosion | | | | | | | | | |
| Working with fragile glassware | | | | | | Risk of cuts | | | | | | | | | |
| Working with electrical equipment | | | | | | Risk of electrocution | | | | | | | | | |
| **Control Measures**  (Please tick boxes) | | **Safety glasses** ✓ | | | **Lab coat** ✓ | **Fume hood** | | | | | | | **Safety Screen** | | |
| **Gloves (type):** Nitrile ✓ Marigolds Other | | | | | | | | | | | | | |
| **Scrubbing train (type):** | | | | | | | **Other:** | | | | | | |
| **Emergency procedures**  Are specific emergency procedures (e.g. first aid, decontamination or firefighting measures) necessary for this process? (Please give details). Add in PXXX hazards from SDS here): | | | | | | | | | | | | | | | |
| **Reaction and/or reagent quench:**  (Give quench reagent and procedure and any possible hazards): | | | | | | | | | | | | | | | |
| **Waste disposal:** Chlorinated waste Non-chlorinated waste Silica waste Metal waste Other  (Circle as appropriate) | | | | | | | | | | | | | | | |
| **Overall risk rating** (select one rating) | **Risk Assessment Matrix** | | | | | | | | | | | | | | |
| **SEVERITY** | | Fatality | Medium | | | High | | | | High | | | Unacceptable | |
| RIDDOR | Medium | | | Medium | | | | High | | | High | |
| Moderate injury | Low | | | Low | | | | Medium | | | Medium | |
| Minor injury | Insignificant | | | Low | | | | Low | | | Low | |
|  | | | Unlikely | | | Possible | | | | Probable | | | Certain | |
| **LIKELIHOOD** | | | | | | | | | | | |
| **Justification for rating** (describe reasoning for risk rating) |  | | | | | | | | | | | | | | |
| **Members of group:**  All members of the group must read and understand this risk assessment (including any comments from the lab supervisor/demonstrator given below) then sign to confirm you have done this before starting work in the lab. You must not make any changes to the procedure stated without prior agreement with the supervisor which should be indicated in the comments box below.  Signature:……………………… Name:………..………………  Signature:……………………… Name:………..………………  Signature:……………………… Name:………..………………  Signature:……………………… Name:………..………………  Signature:……………………… Name:………..………………  Signature:……………………… Name:………..………………  **Date:** | | | | | | **Designated supervisor signature:**  **Date:** | | | | | | | | | |