# SSERC logo

**SSERC Risk Assessment** (revised version March 2018)

(based on HSE’s INDG 163 ‘Risk assessment - A brief guide to controlling risks in the workplace’)

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| Ion Migration | Ion Migration - Microscale |
| *Date of assessment* | 30th June 2022 |
| *Date of review (****Step 5****)* |  |
| *School* |  |
| *Department* |  |

| Step 1 | Step 2 | Step 3 | Step 4 |
| --- | --- | --- | --- |
| List Significant hazards here: | *Who might be harmed and how?* | *What are you already doing?**What further action is needed?* | *Actions* |
| *by whom?* | *Due date* | *Done* |
| Copper sulphate is harmful if swallowed and causes serious eye damage | Technician, preparing copper chromate solution | Wear goggles (BS EN166 3)  |  |  |  |
| Potassium dichromate is toxic, corrosive to skin and eyes, mutagenic, carcinogenic, a skin/respiratory sensitiser and a reproductive toxin | Technician, preparing copper chromate solution | Wear goggles (BS EN166 3) and gloves. The very small quantities reduce the risk greatly |  |  |  |
| Copper chromate is toxic, corrosive to skin and eyes, mutagenic, carcinogenic, a skin/respiratory sensitiser and a reproductive toxin | Technician, preparing copper chromate solution | Wear goggles (BS EN166 3) and gloves. The very small quantities reduce the risk greatly but ensure the lid/bung is tightly in place if shaking the mixture to dissolve it. |  |  |  |
| 880 ammonia is corrosive and releases toxic fumes | Technician, by splashing or inhalation preparing copper chromate solution | Unless quantity is very small, work in a fume cupboard. Wear goggles (BS EN166 3) and gloves. |  |  |  |
| 2 mol l-1 ammonia is corrosive to skin and eyes and releases toxic gases. | Technician, preparing electrolyte. Pupil / teachers during using electrolyte by splashing or inhalation. | Wear eye protection. Avoid splashing. Dispense in a well-ventilated room or use a fume cupboard. |  |  |  |

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| **Description of activity:**Copper sulphate and potassium dichromate are dissolved in ammonia to make copper chromate.A drop of this is applied to a strip of filter paperThe filter paper is moistened with an electrolyte of ammonium chloride in ammoniaAn electric current is passed along the paper and the different ions move in opposite directions – observable because of their different colour.The whole experiment take place in a Petri dish – preventing the release of ammonia fumes. |
| **Additional comments:**At the end of the experiment, the petri dish should be opened in a well-ventilated space – ideally in a fume cupboard – the electrolyte can be mopped up in a paper towel and the filter paper put in the bin. |