# 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’)

2 Pitreavie Court, South Pitreavie Business Park, Dunfermline KY11 8UU

tel : 01383 626070 e-mail : [enquiries@sserc.org.uk](mailto:enquiries@sserc.org.uk) web : [www.sserc.org.uk](http://www.sserc.org.uk)

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| Activity assessed | Manganese Oxidation States |
| *Date of assessment* | 30th June 2020 |
| *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* |
| Manganese II sulphate is a specific target Organ Toxin Cat 2 – affecting the brain. | Technician/demonstrator by inhalation/ingestion while preparing the solutions. | Wear eye protection and gloves. Avoid raising dust. |  |  | |  | |
| Potassium manganate VII is harmful Cat 4 if swallowed and an oxidizing agent. | Technician/demonstrator by inhalation/ingestion while preparing the solutions. | Wear eye protection and gloves. Avoid raising dust.  Keep away from combustible materials |  |  | |  | |
| Sodium sulphite is a skin, eye and respiratory irritant Cat 2 | Technician/demonstrator by inhalation/ingestion while preparing the solutions. | Wear eye protection and gloves. Avoid raising dust. |  |  | |  | |
| Sulphuric acid (conc and 6M) is corrosive Cat 1A | Technician/demonstrator by splashing while preparing solution. | Wear goggles (BS EN166 3) or a face shield and nitrile gloves (and possibly a PVC apron).  Follow correct procedure for diluting concentrated acid. (See SSERC Hazardous Chemicals Database) |  |  | |  | |
| Sodium hydroxide (solid and 6M) is corrosive Cat 1A | Technician/demonstrator by splashing while preparing solution. | Wear goggles (BS EN166 3) and PVC gloves.  Be careful of the heating effect of diluting sodium hydroxide |  |  | |  | |

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| **Description of activity:**  A series of reactions are carried out to produce all 6 oxidation states of manganese, either by oxidation of Mn2+ or reduction of Mn7+  The reactions are carried out in small beakers or petri-dishes and shown via an OHP or visualiser |
| **Additional comments:**  The sulphuric acid and sodium hydroxide solutions are extremely corrosive – be careful.  Manganese compounds are harmful to the aquatic environment. The amount discharged to the environment should be kept to a minimum. |