# 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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| Activity assessed | Iron & Manganese in tea |
| *Date of assessment* | 3rd February 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* |
| **Iron** |  |  |  |  | |  | |
| Burning Tea | Anyone nearby by inhalation of the smoke. | Carry out in a fume cupboard |  |  | |  | |
| 2 mol l-1 Nitric acid is corrosive | Pupil carrying out procedure - by splashing. | Wear goggles (BS EN 166 3). |  |  | |  | |
| Iron III nitrate is a skin/eye/respiratory irritant and an oxidising agent | Pupil preparing standards - by spillage | Keep away from organics / reducing agents. |  |  | |  | |
| **Manganese** |  |  |  |  | |  | |
| Burning Tea | Anyone nearby by inhalation of the smoke. | Carry out in a fume cupboard |  |  | |  | |
| Concentrated hydrochloric acid is corrosive and gives off irritating and corrosive fumes. | Pupil carrying out procedure - by splashing or inhalation of fumes | Wear goggles (BS EN 166 3) and gloves.  Evaporate to dryness in a fume cupboard. |  |  | |  | |
| 4 mol l-1 Sulphuric acid is corrosive | Pupil carrying out procedure - by splashing. | Wear goggles (BS EN 166 3) and gloves. |  |  | |  | |
| Hydrogen chloride fumes are irritating and corrosive | Pupil when heating with H2SO4 to drive off chlorides | Carry out in fume cupboard |  |  | |  | |
| Concentrated phosphoric acid is corrosive | Pupil carrying out procedure – by splashing | Wear goggles (BS EN 166 3) and gloves. |  |  | |  | |
| Potassium Iodate VII (periodate) is oxidising and a skin/eye irritant | Pupil carrying out procedure – by spillage | Keep away from organics / reducing agents. Wear goggles (BS EN 166 3) |  |  | |  | |
| Potassium manganate VII is an oxidising agent and is harmful by ingestion. | Pupil preparing standards - by spillage | Keep away from organics / reducing agents. |  |  | |  | |

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| **Description of activity:**  Samples of tea are burned.  The ash is then treated with  nitric acid and ammonium thiocyanate for iron  hydrochloric, sulphuric and phosphoric acids and then potassium periodate for manganese  The solutions are then read in a colorimeter and compared with standard curves made with  Iron nitrate for iron  Potassium manganate VII for manganese. |
| **Additional comments:** |