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**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 | Determination of manganese in steel (AH PPA) |
| *Date of assessment* | 26the Feb 2021 |
| *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* |
| Concentrated hydrochloric acid is corrosive and produces corrosive fumes | Technician while preparing dilute acid by splashes  | Wear goggles (BS EN166 3) or a face shield and gloves. Work in a well-ventilated laboratory or a fume cupboard. |  |  |  |
| 1 mol l-1 sulphuric acid is a skin/eye irritant. | Pupil/teacher by splashes while using. | Wear eye protection. |  |  |  |
| Nitric acid is corrosive and produces toxic fumes. | Technician while preparing the 2 mol l-1 solution by splashes or inhalation of fumes | Wear goggles (BS EN166 3) and gloves. Work in a fume cupboard or a well ventilated laboratory if quantities are small. |  |  |  |
| 2 mol l-1 nitric acid is corrosive | Pupil / teacher while carrying out experiment by splashes or inhalation. | Wear goggles (BS EN166 3 and consider gloves. Boiling will produce nitric acid fumes so the process should be carried out in a fume cupboard or a well-ventilated laboratory. |  |  |  |
| Concentrated phosphoric acid is corrosive. | Technician while preparing dilute acid by splashes  | Wear goggles (BS EN166 3) or a face shield and gloves.  |  |  |  |
| Potassium persulphate is a skin/eye and respiratory irritant and a skin/respiratory sensitizer. | Pupil/teacher while carrying out experiment. | Avoid raising dust and handle with care. |  |  |  |
| Potassium permanganate is harmful if ingested and a powerful oxidizing agent.The solution is a skin/eye irritant (due  | Technician while preparing solution. Pupil/teacher while carrying out experiment. From splashesTechnician while preparing dilute acid by splashes to the acid) | Avoid raising dust. Consider wearing gloves (this will avoid staining skin as well)Wear eye protection for handling the 1 mol l-1 acid. |  |  |  |
| Propanone is highly flammable and an eye and respiratory irritant. (repeated exposure can cause skin damage) | Pupil/teacher while carrying out experiment by fire from accidental ignition and exposure to more than small amounts of fumes. | Keep away from sources of ignition. Work in a fume cupboard or a well ventilated laboratory. |  |  |  |

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| **Description of activity:**A sample of steel is dissolved in nitric acid and then potassium persulphate is used to oxidise it to permanganate. The coloured solution is estimated by colorimeter against standard solutions of permanganate. |

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| **Additional comments:** |