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| Name and nature of activity | SOP: The Thermite Reaction |
| Location and date of activity |       |
| Name of teacher/technician |       |
| Activity type | [ ] Technician procedure [x] Teacher demonstration [ ] Student activity – Student year group       |
| Physics and general equipment | Type of hazard | Controls and other measures |
| Retort stand and metal clamp (ring clamp or four-pronged clamp)Metal bucket and sandGas lighter (ignition Method A or B)Flower pots (as per glassware control)Tongs | [ ]  Radiation  ionising  laser[ ]  Electrical [x]  Thermal[ ]  Projectiles[ ]  Sharps[ ]  Other –       | [ ]  Relevant signage[x]  Perspex safety shield[ ]  Sharps container[x]  Glassware free from cracks or chips[x]  Safety glasses[x]  Thermally insulated gloves[ ]  Other – see comments below |
| Chemicals used and produced | Type of hazard | Controls and other measures |
| Aluminium powderIron (III) oxide(A) Magnesium ribbon (flammable) Magnesium oxide (irritant)(B) Sparkler (flammable)(C) Potassium permanganate (oxidising) Glycerol Manganese oxides (toxic)Iron pieces, irregularly shaped | xploding bomb[ ]  Explosivelame[x]  Flammablelame over circle[x]  Oxidisingas cylinder[ ]  Gases under pressureorrosion[ ]  Corrosive | kull and cross bones[ ]  Acute toxicityxclamation mark [x]  Health hazardsealth hazard[ ]  Chronic health hazards nvironment[ ]  Environmental[x]  Other – Potential for fire | [x]  Limit quantity/concentration[x]  Perspex safety shield [x]  Ventilation: natural/exhaust[ ]  Fume cupboard[x]  Safety glasses[x]  Laboratory coat/apron [x]  Gloves: latex/nitrile/neoprene/PVC[ ]  Safety shower[x]  Other – A fire extinguisher should be on hand for spot fires.  |
| Biological/geological materials used | Type of hazard | Controls and other measures |
| NA | [ ]  Biohazard [ ]  Dust/aerosols [ ]  Sharps[ ]  Manual handling [ ]  Other –       | [ ]  Steriliser[ ]  Disinfectant [ ]  Sharps container [ ]  Dust mask[ ]  Safety glasses[ ]  Gloves [ ]  Other –       |
| Waste produced | Waste disposal procedure |
| Iron pieces, irregularly shapedManganese oxides (method C) | [ ]  Pre-treatment of waste –      [ ]  Sink with water –      [x]  Regular waste – If using ignition method A or B[x]  Licenced hazardous waste company – If using ignition method C[ ]  Other –       |
| Standard Operating Procedures |
| [ ]  I have read the relevant Standard Operating Procedure. [ ]  I am experienced/trained in using all the equipment listed. [ ]  All chemicals used and produced are approved for use.[ ]  I have read the current SDSs for all hazardous chemicals used and produced.[ ]  I am aware of safety guidelines for using all chemicals, materials and equipment. [ ]  I will follow local guidelines for waste disposal (water authority, local council, EPA).[ ]  I am aware of first aid procedures if required. |
| Other comments: This should be performed outside on a fire resistant solid surface such as concrete in a windless area well away from any combustible or flammable materials. A fire extinguisher should be on hand for spot fires. New flowerpots should be used |
| Conclusion:[ ]  Risks not significant now and not likely to increase.[ ]  Risks significant but effectively controlled at the moment.[ ]  Risks significant and not adequately controlled at the moment.[ ]  Uncertain about risks; more detailed assessment required. |
| Assessment carried out by:      | Signature: | Date:       |
| Assessment approved by:      | Signature: | Date:       |
| Next assessment due:       |
| **This Risk Assessment assumes that the activity will be conducted in a science teaching area with the following facilities: electricity, running water, emergency shut-offs for electricity, gas if applicable, and water, regular testing and tagging of portable appliances; emergency contingencies such as evacuation/emergency plans, appropriate fire extinguishers, spill kits, hand washing facilities, eyewash/safety shower and first aid supplies. It is also assumed that all the necessary licencing requirements and approvals are obtained prior to the activity.** |