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| --- | --- | --- | --- | --- | --- |
| Name and nature of activity | Diluting concentrated sulfuric acid | | | | |
| Location and date of activity |  | | | | |
| Name of teacher/technician |  | | | | |
| Activity type | Technician procedure Teacher demonstration Student activity – Student year group | | | | |
| Physics and general equipment | Type of hazard | | | Controls and other measures | |
| Glassware  Large trough or bucket for water bath | Radiation  ionising  laser  Electrical  Thermal  Projectiles  Sharps  Other – Possible heavy lifting | | | Relevant signage  Perspex safety shield  Sharps container  Glassware free from cracks or chips  Safety glasses  Thermally insulated gloves  Other – Water bath filled/emptied in fume cupboard with a smaller container. | |
| Chemicals used and produced | Type of hazard | | | Controls and other measures | |
| Sulfuric acid, concentrated  Sulfuric acid, dilute solution | xploding bomb Explosive  lame Flammable  lame over circle Oxidising  as cylinder Gases under pressure  orrosion Corrosive | | kull and cross bones Acute toxicity  xclamation mark  Health hazards  ealth hazard Chronic health hazards  nvironment Environmental  Other – Heat and fumes generated | Limit quantity/concentration  Perspex safety shield  Ventilation: natural/exhaust  Fume cupboard  Safety glasses  Laboratory coat/apron  Gloves: latex/nitrile/neoprene/PVC  Safety shower  Other – Use a cool water bath to absorb heat produced in reaction. Gloves: Neoprene gloves give fair protection; gloves of other materials may provide splash protection.  Ensure spill kit is available. | |
| Biological/geological materials | 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 | | | | |
| Unused concentrated sulfuric acid  Residual concentrated acid on glassware | Pre-treatment of waste – If small quantity, neutralise first  Sink with water – If small quantity, and after neutralisation  Regular waste –  Licenced hazardous waste company – If large quantity  Other – Unused concentrated acid may be transferred to a suitable labelled container and stored for future use. Rinse contaminated glassware in fume cupboard before removal. | | | | |
| 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: If storing the unused concentrated acid, it is best transferred to a separate container to avoid contamination of the stock bottle. | | | | | |
| 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.** | | | | | |