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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 | A cool experiment |
| *Date of assessment* | O5/02/2018 |
| *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* |
| Barium hydroxide harmful if swallowed, by skin contact or if dust inhaled. Also corrosive to skin, eyes and mucous membranes. | Technician by inhalation or skin contact. | Avoid raising or inhaling dust.Gloves should be worn.Indirect vent goggles (BS EN166 3) should be worn. |  |  |  |
| Ammonium thiocyanate is irritating to eyes and skin, and harmful by swallowing, inhalation or prolonged exposure. | Technician by inhalation or skin contact. | Avoid raising or inhaling dust.Gloves should be worn.Indirect vent goggles (BS EN166 3) should be worn. |  |  |  |
| Temperature of reaction mixture can fall to –20°C.  | Demonstrator/Audience by handling flask. | Handle flask only by the neck.If appropriate, eye protection should be worn. |  |  |  |
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| **Description of activity:**Weigh out separately 20g of the barium hydroxide and 16 g of the ammonium thiocyanate. They are then mixed and stirred – the temperature drops dramatically. If this is done in a beaker sitting on some wood/hardboard with some water beneath the beaker, it will freeze to the wook and lift it up. |

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| **Additional comments:**Barium compounds are harmful to the environment. Do not dispose of the chemicals down the sink. Add excess 0.2M Na2SO4 (aq) to precipitate barium ions. Filter and bag barium sulphate and dispose. |