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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 | **Silver Mirror** |
| *Date of assessment* | 14/12/2019 |
| *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 nitric acid is corrosive. | Technician/demonstrator cleaning flask. | Wear rubber gloves and goggles (BS EN166 3) |  |  |  |
| Concentrated ammonia solution is Toxic if inhaled in high concentrations or if swallowed and very irritant to the eyes and skin | Technician/demonstrator preparing reaction mixture. | Small amount but still handle in a well ventilated area or fumwe cupboard. Remove stopper carefully as pressure can build up. |  |  |  |
| Silver nitrate is corrosive (0.1 M solution is irritant) | Technician/demonstrator preparing reaction mixture. | Wear gloves and goggles (BS EN166 3) |  |  |  |
| Sodium hydroxide is corrosive (solid and the 0.8 M used) | Technician/demonstrator preparing reaction mixture. | Wear gloves and goggles (BS EN166 3) |  |  |  |
| Reaction mixture forms shock sensitive silver fulminate on standing. | Technician/demonstrator/Audience | Do not prepare more than 30 minutes or so before the demonstration. Dispose of residue immediately. |  |  |  |

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| **Description of activity:**  Ammoniacal silver nitrate solution is prepared.  This is then mixed with glucose (or another suitable reducing agent) in a clean, warmed flask.  As the solution is swirled around, colloidal silver is formed which coats the inside of the flask with a bright mirror coating |

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| **Additional comments:**  Do NOT prepare the ammoniacal silver nitrate in advance. Make up no more than 30 minutes or so before use.  Residue and left-over reagent should be washed down the sink with copious quantities of water.  The reaction works best with a clean flask that has been warmed. Fill it with hot tap water beforehand and empty out immediately prior to the experiment. |