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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 | Colour capers – amino complexes of copper |
| *Date of assessment* | 24th March 2016 |
| *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* |
| Copper(II) ethanoate is  Harmful (Acute Tox Cat 4) by swallowing or inhalation of the dust and causes eye damage Cat 1 | Technicians/teacher/ students by splashes | Wear indirect vent goggles (BS EN 166 3). Avoid raising dust when making solution. |  |  |  |
| Ethanol (IMS) is Highly flammable, The denaturing substances present in industrial spirit and in mineralised methylated spirits increase the toxicity. | Technicians/teacher/ students. | Wear eye protection.  Ensure the room is well ventilated  Ensure there is no source of ignition |  |  |  |

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| **Description of activity:**  Copper ethanoate (acetate) is dissolved in water and the solution added to warm clear IMS. Ensure there are no naked flames when using the ethanol. It is recommended that a water bath be used to warm it. A solution of glycine is then added to the copper acetate/ethanol solution and the mixture cooled in an ice bath. A blue compound precipitates.  Filter this and divide it into 2 equal parts. Place one part in an oven at 120 C and the other in an oven at 170 C.  Check the colours after about 20 minutes.  One is still blue but the other will be a purple colour. |

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| **Additional comments:**  This activity allows pupils to experience quite a few techniques used in chemistry as well as observing a colour change on precipitation to indicate a chemical reaction is occurring.  Techniques of weighing using a balance, measuring liquids out using a measuring cylinder, stirring and dissolving, solvents, Health and Safety using flammable liquids, precipitation, filtering and drying can all be taught. |