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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 | Synthesis of Sudan I |
| *Date of assessment* | 7th July 2022 |
| *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* |
| Naphthalene-1-ol is irritant to skin and eyes and harmful if swallowed. | Teacher/technician while preparing solution. | Wear eye protection. |  |  |  |
| Sodium hydroxide is corrosive to skin and eyes.0.5 mol l-1 solution is (just) an irritant rather than corrosive. | Teacher/technician while preparing solution. | Wear gloves and eye protection, Use goggles to BS EN 166 3. |  |  |  |
| **Solution 1** (naphthalene-1-ol in 0.5 mol l-1 NaOH) is irritant to skin and eyes | Pupils while carrying out experiment. | Wear eye protection. |  |  |  |
| Hydrochloric acid is corrosive to skin and eyes and gives off irritating and corrosive fumes. | Teacher/technician while preparing solution. | Wear gloves and goggles to BS EN 166 3. Work in a fume cupboard or (if quantities are small) in a well-ventilated lab. |  |  |  |
| Aniline (phenylamine) is toxic (Cat 3) by all routes, causes eye damage, is a suspected carcinogen and mutagen and specific target organ toxin. | Teacher/technician while preparing solution. | Work in a fume cupboard or (if quantities are small) in a well-ventilated lab. Wear gloves and goggles to BS EN 166 3 and gloves. |  |  |  |
| **Solution 2** - (benzenediazonium chloride) is hard to find details on.The solution will certainly be corrosive to skin and eyes and it would seem prudent to assume similar properties to aniline above. | Teacher/technician while preparing solution.Pupils while carrying out experiment. | Work in a fume cupboard or (if quantities are small) in a well-ventilated lab. Wear gloves and goggles to BS EN 166 3 and gloves.Work in a fume cupboard or (if quantities are small) in a well-ventilated lab. Wear gloves and goggles to BS EN 166 3 and gloves. |  |  |  |
| Sodium (III) nitrate (nitrite) is toxic and oxidizing**Solution 3** (1.15 mol l-1 ) is harmful if swallowed. | Teacher/technician while preparing solution.Pupils while carrying out experiment | Wear gloves and eye protection, Use goggles to BS EN 166 3. |  |  |  |
| Sudan I is mutagenic, carcinogenic and a skin sensitiser. | Pupils while carrying out experiment | Wear gloves and eye protection, Use goggles to BS EN 166 3. |  |  |  |

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| **Description of activity:**3 solutions are prepared: 1 alkaline naphthalene-2-ol, 2. Acidic benzenediazonium chloride and 3 sodium nitrite.These are chilled and then mixed together to make Sudan I dye. This is filtered and recrystallized from ethanol. |

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| **Additional comments:** |