# SSERC logo

**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 | Liquid Crystals |
| *Date of assessment* | 30th June 2020 |
| *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* |
| Cholesteryl Benzoate – Possible **irritant** to eyes, skin, respiratory tract. | Technician, teacher, pupils | Wear goggles, Wear gloves and avoid skin contact. Wash off skin with copious amounts of water. Avoid breathing dust. Use in well ventilated area. Wash hands after use. |  |  | |  | |
| Cholesteryl Oleyl Carbonate  Possible **irritant** to eyes, skin, respiratory tract. | Technician, teacher, pupils | Wear goggles, Wear gloves and avoid skin contact. Wash off skin with copious amounts of water. Avoid breathing dust. Use in well ventilated area. Wash hands after use. |  |  | |  | |
| Cholesteryl Pelargonate  Possible **irritant** to eyes, skin, respiratory tract. | Technician, teacher, pupils | Wear goggles, Wear gloves and avoid skin contact. Wash off skin with copious amounts of water. Avoid breathing dust. Use in well ventilated area. Wash hands after use. |  |  | |  | |
| Oven  Danger of burns | Teacher, pupils | Remove with care. Do not touch hot test tube or rack |  |  | |  | |

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| **Description of activity:**  Different mixes of the chemicals are weighed out and fused in a hot oven. The mixtures are allowed to cool and a thin film of each painted onto sticky-backed plastic squares. These are sealed with another layer of plastic to keep the mixes water and air free. Ingress of these will destroy the properties of the liquid crystal mix.  Pupils then determine the temperature range of the liquid crystal(s) they have made by observing the colours as the temperature is increased from iced water to warm water from a kettle.  Finally they can put their squares together to produce a strip of crystals which can act as a thermometer. |
| **Additional comments:**  A “Mood Patch” can also be made by spreading a thin layer of a mix onto a square of black polythene from a bin liner and then sealing it with a top layer of sticky-backed plastic. When the patch is held on the inner wrist it starts to change colour. The degree of colour change towards the purple indicates a hotter temperature.  As an extension, a liquid crystal mix can be encapsulated in a small glass vial and used as a colour changing necklace. |