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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 | Triboluminescent crystals |
| *Date of assessment* | 11th 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* |
| Copper thiocyanate emits toxic gases in contact with concentrated acids. |  | There is no risk from carrying out the experiment as described. |  |  |  |
| Pyridine is highly flammable and harmful if swallowed, inhaled or in contact with the skin. | Technician / teacher while preparing crystals. | Keep away from sources of ignition. Wear eye protection and consider gloves. Work in a fume cupboard – not least because of the appalling smell. |  |  |  |
| Triphenylphosphine is harmful if swallowed, a skin sensitiser, causes serious eye damage and is a specific target organ toxin | Technician / teacher while preparing crystals. | Wear goggles (BS EN166 3) and gloves. |  |  |  |
| Methylbenzene is highly flammable, causes skin, eye and respiratory irritation, is a reproductive toxin and is a specific target organ toxin | Technician / teacher while preparing crystals. | Keep away from sources of ignition. Wear eye protection and consider gloves. Work in a fume cupboard |  |  |  |
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| **Description of activity:**  Copper thiocyanate and triphenylphosphine are mixed and then dissolved in pyridnine.  The crystals crystallise from the pyridine and are washed 9optionally) in methylbenzene.  The demonstration merely involves crushing the crystals with a glass rod. |

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| **Additional comments:**  The crystals can be regenerated by redissolving in pyridine and recrystallising. |