# SSERC logo

**SSERC Risk Assessment** (revised version November 2009)

(based on HSE ‘5 steps to risk assessment’)

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| Activity assessed | Methanol Flame Tests |
| *Date of assessment* | 3rd January 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* |
| Methanol is highly flammable and toxic – particularly to the optic nerve. | Technician and/or teacher | Work in a well-ventilated area.  Keep well away from sources of ignition (especially container)  Do not use more than the suggested amount.  Do not leave the samples standing for longer than necessary – to reduce any evaporation of methanol. |  |  | |  | |
| metal salts are various combinations of: toxic, harmful, dangerous for the environment and irritant | Technician and/or teacher by inhalation | Avoid raising dust  Wear eye protection and possibly gloves.  If contact with eyes or skin wash off/ out with copious quantities of water |  |  | |  | |

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| **Description of activity:**  Small quantities of salts are placed on pyrex watch glasses or petri-dishes. A few cm3 of methanol is placed on top and ignited. After a few seconds enough of the metal ions begins to evaporate to produce the characteristic flame colour of the element. With these quantities, the flames die down in about a minute.  Methanol is used in preference to ethanol as the flame is all but completely colourless. Though ethanol is safer. |
| **Additional comments:**  Methanol is **highly** flammable and toxic, especially to the optic nerve. Do not use larger amounts than stated.  Once finished, if you wish to repeat the experiment do **not** add more methanol until the watch glasses are completely cool (or use fresh ones). There have been (in the USA, granted) some nasty accidents where teachers have tried topping up the containers while still burning!  An alternative to glass containers is to use the metal containers that tea lights come in. Interestingly, when using these, the copper chloride reacts with the aluminium in some way and the flame goes blue rather than green. |