# 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 | Tomat Bromine Rainbow |
| *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* |
| Bromine is toxic and corrosive | Technician (or teacher) preparing bromine water. | Wear goggles (BS EN 166 3) and nitrile gloves and work in a fume cupboard. (See SSERC Hazardous Chemicals Database for more details) |  |  | |  | |
| Bromine water is a skin/eye irritant and gives off bromine vapour | Teacher, audience by inhalation during demonstration | Work in a well-ventilated room. Demonstrator should wear eye protection and consider gloves. |  |  | |  | |
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| **Description of activity:**  To a cylinder of tomato juice, 10 – 15% of its volume of saturated bromine water is added.  This adds across the double bonds of the terpenes decolourising them. A coloured intermediate is stabilized in tomato juice by the presence of lipid micelles. The result is a rainbow of colours from red through blue and green to yellow.  Alternatively, different amounts of bromine water can be added to a series of test tubes of tomato juice to produce a rainbow of colours. |
| **Additional comments:**  The bromine and tomato juice mixture can be washed to waste with plenty of cold, running water. |