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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 | Burning Magnesium ribbon in steam |
| *Date of assessment* | *February 2023* |
| *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* |
| Magnesium metal is highly flammable and burns at an extremely high temperature. | Technician, teacher & pupils. | Do NOT use powder for this experiment.  Keep away from sources of ignition other than during the experiment.  Wear eye protection and ensure students are at least 2 m back. |  |  |  |
| Burning magnesium is extremely bright | Teacher & pupils. | Do not look directly at burning magnesium. Instruct students to look obliquely at burning magnesium.  While still very bright, it is not as bright and burning the ribbon in oxygen and the glass test tube absorbs most of the uv. |  |  |  |
| Danger of severe burns when handling the hot test tube. | Teacher & technician | Ensure the test tube is cool before handling. |  |  |  |
| Test tube can break as the reaction weakens it. | Teacher & technician | Handle with care and watch out for sharp edges if it breaks. |  |  |  |
| Reaction with the glass produces a small amount of silicides which produce flammable gases. | Teacher & technician while clearing away | Addition of water produces spontaneously flammable silanes. But these are in small quantities and are of no significant hazard. |  |  |  |

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| **Description of activity:**  This is a teacher demonstration.  A coil of magnesium ribbon in a test tube is heated strongly until it just catches fire.  The water-soaked mineral wool at the bottom of the tube is heated to produce steam.  This passes over the burning magnesium initiating a vigorous reaction producing hydrogen gas which can be ignited. |

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| **Additional comments:** |