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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 | Ammonium dichromate volcano |
| *Date of assessment* | 21st March 2014 |
| *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* |
| Ammonium dichromate is an **oxidiser**, **acute toxin**, (cat 3 by ingestion and cat 2 by inhalation), **corrosive**, **carcinogen**, **mutagen**, **reproductive** **toxin**, a **skin** **sensitiser**, a **specific** **target** **organ** **toxin** | Demonstrator by skin contact or inhalation while preparing the demonstration.Demonstrator / audience by inhalation during the experiment | Wear goggles (BS EN166 3) and gloves.Avoid raising dust. Keep away from flammable substances.Ensure there is a substantial plug of glass/mineral wool in the neck of the flask.Do not exceed the quantities stated. |  |  |  |
| Chromium III oxide is **Acute toxin** Cat 4 (oral)**Skin Sensitiser** Cat 1 **Skin / Eye irritant** Cat 2**Reproductive toxin** Cat 1B | Demonstrator / audience by inhalation during the experiment | Ensure there is a substantial plug of glass/mineral wool in the neck of the flask.Do not exceed the quantities stated. |  |  |  |

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| **Description of activity:**3g of ammonium dichromate is poured down a funnel into a 1 l (or bigger) conical flask to make a conical pile in the centre. The neck of the flask is plugged with glass/mineral wool and the bottom of the flask, where the dichromate is, is heated with a Bunsen burner. As soon as sparks start to appear, the heat is removed.The ammonium dichromate decomposes with orange sparks to produce a large volume of green chromium III oxide. The nitrogen and water vapour given off make a ‘volcano’ of the green oxide particles. |

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| **Additional comments:**If the ammonium dichromate is in a pile rather than scattered there should be very little if any dichromate left over after the activity. The plug of glass or mineral wool should prevent any particles of either dichromate or chromium III oxide escaping into the room.DisposalThe chromium III oxide is of much lower hazard Mixtures containing below 20% can be bagged and put in the normal refuse.Greater concentrations, including the solid, or large quantities should be kept for disposal by a licensed contractor.  |