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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 | Ceramics |
| *Date of assessment* | October 2016 |
| *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* |
| **Making a pseudo ceramic**No chemical hazards but the mixture is hot and could fall over. | Pupils while stirring reaction mixture. | Wear goggles (BS EN 166 3) and use tongs (or a clamp) to hold the beaker steady while stirring. |  |  |  |
| **Cement**Cement is a skin irritant and can cause eye damage. Prolonged skin contact can cause damage. | Teacher/technician while measuring out samples.If using the method described, contact with pupils’ skin should be minimal | Wear goggles (BS EN 166 3) and consider glovesAvoid raising dust. Wash off with copious quantities of water. |  |  |  |
| **Porosity** Possible physical damage to eye.  | Teacher/technician while breaking up larger pieces | Wear eye protection |  |  |  |
| **Dissolving glass** Possible physical damage to eye. | Teacher/technician while breaking up larger pieces.Pupils while grinding up small pieces | Wear eye protection |  |  |  |
| **Carbonation of concrete / dissolving glass**Phenolphthalein is a Cat 2 carcinogen. The indicator solution is highly flammable | Pupils by skin contact. Possible fire hazard | Keep away from sources of ignition. Wear eye protection.  |  |  |  |
| **Reactions with acid** Some samples of concrete and especially brick give off hydrogen sulphide (toxic) | Pupil while observing test tubes | Care to be taken while sniffing the tubes to avoid excessive inhalation of H2S |  |  |  |

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| **Description of activity:**A suite of activities relating to ceramics.1. Making a pseudo ceramic (a form of polymer clay)
2. Using natural cement to make cement bars
3. Using phenolphthalein to investigate carbonation on a freshly broken face of concrete.
4. Investigating porosity by seeing how much water is absorbed by pieces of different ceramics. (Including dissolving fine glass powder in water)
5. Investigating the reactions of ceramics with dilute acid.
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| **Additional comments:**If natural cement is not available (and there are not many suppliers), ordinary portland cement is quite adequate but will take longer to set. |