

Group 2 metals
magnesium and calcium

Substance	Hazard	Comment
<p>Magnesium (metal) Solid (powder, turnings, ribbon)</p>	 <p>FLAMMABLE</p>	<p>DANGER: (powder, turnings) flammable solid, self-heating in large (kilogram) quantities; may catch fire; contact with water releases flammable gases. Ribbon – classification varies – may be as powder/turnings or may be Currently not classified as hazardous.</p> <p>It is moderately difficult to ignite but, once burning, it does so very vigorously and is difficult to extinguish. Ordinary fire-fighting methods are not suitable, but dry sand may be used. The flame is very bright and may damage eyesight. View through shade 9 welding filter only.</p> <p>It reacts readily with acids to produce hydrogen, an extremely flammable gas (see CLEAPSS Student Safety Sheet 50).</p>
<p>Calcium (metal) solid</p>	 <p>HIGHLY FLAMMABLE</p>	<p>DANGER: In contact with water releases flammable gases.</p> <p>It reacts readily with water (or acids) to produce hydrogen, an extremely flammable gas (see CLEAPSS Student Safety Sheet 50).</p> <p>Contact with moisture forms calcium oxide or hydroxide which are CORROSIVE to eyes IRRITANT to skin (see CLEAPSS Student Safety Sheet 32).</p> <p>It is difficult to ignite but, once burning, does so vigorously.</p>

Typical control measures to reduce risk

- Conduct all experiments on a small scale.
- Keep careful control of stocks to prevent theft.
- Wear eye protection.
- NEVER look directly at magnesium when it is burning: view through a passive welding filter lens, shade 9

Assessing the risks

- What are the details of the activity to be undertaken? What are the hazards?
- What is the chance of something going wrong?
eg is there the possibility of theft or foolish behaviour?
- How serious would it be if something did go wrong?
- How can the risk(s) be controlled for this activity?
eg can it be done safely? Does the procedure need to be altered? Should goggles or safety spectacles be worn?

Emergency action

In all emergency situations, alert the responsible adult immediately. Be aware that actions may include the following:

- In the eye If magnesium powder or calcium contaminates the eyes, irrigate the eye with gently-running tap water for at least 20 minutes. Call 999/111.
- In the mouth/swallowed Do no more than rinse and spit with drinking water. Do not induce vomiting. Call 999/111.
- Skin burnt by burning metal or by moist calcium Remove any pieces of solid with forceps. Irrigate the affected skin area with gently-running tap water for at least 20 minutes. If a large area is affected or symptoms occur, call 999/111.
- Metal catches fire Smother with clean, dry sand. Have a container of this sand to hand.
- Spilt on the floor, bench, etc Scoop up as much metal as possible into a dry container. Wipe the area with a damp cloth which (for calcium) should then be placed in a bucket of water.