



Group II metals

includes magnesium & calcium

Substance	Hazard	Comment
Magnesium Solid powder, turnings, ribbon	 FLAMMABLE	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 low hazard! 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 eye sight. View through shade 9 welding filter or narrow gap between fingers. It reacts readily with acids to produce hydrogen, an extremely flammable gas. (See CLEAPSS Student Safety Sheet 50.)
Calcium solid	 FLAMMABLE	DANGER: In contact with water releases flammable gases. It reacts readily with water (or acids) to produce hydrogen, an extremely flammable gas. (See CLEAPSS Student Safety Sheet 50.) Contact with moisture forms calcium oxide or hydroxide which are CORROSIVE to eyes IRRITANT to skin. (See CLEAPSS Student Safety Sheet 32). It is difficult to ignite but, once burning, does so vigorously.

Typical control measures to reduce risk

- Conduct all experiments on a small scale.
- Keep careful control of stocks to prevent theft.
- Wear eye protection.
- Avoid looking directly at the flame from burning magnesium: use welding filters shade 9 or narrow gap between fingers.

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 the eye** If magnesium powder or calcium contaminates the eyes, flood with gently-running tap water for 10 minutes. Consult a medic.
- **Swallowed** Do no more than wash out the mouth with drinking water. Consult a medic.
- **Skin burnt by burning metal or by moist calcium** Remove any pieces of solid with forceps. Then drench the skin with plenty of water. If a large area is affected or blistering occurs, consult a medic.
- **Metal catches fire** Smother with clean, dry sand.
- **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.