






Calcium hydroxide and oxide

including slaked lime, quick Lime and limewater

| Substance | Hazard | Comment |
|--|---|---|
| Calcium oxide <i>Solid</i> Quick lime <i>Solid</i> (Old samples of calcium oxide are mostly calcium hydroxide.) |  CORROSIVE  IRRITANT | DANGER: Causes serious eye damage and skin irritation. Reacts violently with water, becoming very hot - dust particles may shoot out. For a 15-minute exposure, the concentration of the powder in the atmosphere should not exceed 6 mg m ⁻³ . Used in making mortar, cement and concrete – careless handling of these has caused injuries in the building industry. Added to soil to neutralise the acidity. |
| Calcium hydroxide <i>Solid</i> Slaked lime, garden lime |  CORROSIVE  IRRITANT | DANGER: Causes serious eye damage and skin irritation. For a 15-minute exposure, the concentration of the powder in the atmosphere should not exceed 15 mg m ⁻³ . Used in making mortar, cement and concrete – careless handling of these has caused injuries in the building industry. Added to soil to neutralise the acidity. |
| Calcium hydroxide <i>Solution</i> Limewater Limewater is a saturated solution of calcium hydroxide, less than 0.02 M. |  IRRITANT | Even a saturated solution of calcium hydroxide is so dilute that it is not classed as IRRITANT, despite pH = 12.4. However, limewater is usually made in schools by adding excess solid calcium hydroxide (or oxide) to water. Undissolved solid will remain and that is irritating to the eyes and skin (but any solid present might well be calcium carbonate, currently not classified as hazardous). |

Typical control measures to reduce risk

- Wear eye protection.
- Eye protection is advisable when using limewater, especially if blowing into it.

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 solid particles spitting when adding water, dust blowing around or liquid splashing into the eye when blowing into limewater.
- How serious would it be if something did go wrong?
Note – alkali in the eye causes more damage than acid of equivalent concentration.
- 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
 Irrigate the eye with gently-running tap water for at least 20 minutes. Call 999/111. If it is necessary to go to hospital, continue washing the eye during the journey in an ambulance.
 Limewater is unlikely to cause serious problems. Irrigate the eye with gently-running tap water for at least 20 minutes. Call 999/111 as appropriate.
- In the mouth/swallowed
 Do no more than rinse and spit with drinking water. Do **not** induce vomiting. Call 999/111.
 Limewater is unlikely to cause serious problems. Do no more than rinse and spit with drinking water. Do **not** induce vomiting. Call 999/111 as appropriate.
- Spilt on the skin or clothing
 Brush off the solid. Remove contaminated clothing. Irrigate the affected area with gently-running tap water for at least 20 minutes. Call 999/111 as appropriate. Rinse clothing.
- Spilt on the floor, bench, etc
 Wipe up limewater or small amounts of solid with a damp cloth and rinse it well.
 For larger amounts of solid, scoop into a bucket, add water to the area followed by mineral absorbent (eg cat litter).