



Calcium Hypochlorite

Calcium hypochlorite is supplied as a solid pellet or granular formula.

It is a whitish powder and has the chemical formula $\text{Ca}(\text{OCl})_2$.

When handled correctly, it is not a danger to operators or pool users.

Chemistry

When reacted with water, calcium hypochlorite forms hypochlorous acid and calcium hydroxide.

Ca(OCl) ₂ Calcium Hypochlorite	+	H ₂ O -----> Water	2 HOCl Hypochlorous acid ----->	+	Ca(OH) ₂ Calcium hydroxide----->
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Calcium hypochlorite contains approximately 65-70 per cent available chlorine. One kilogram will contain 650 grams of actual hypochlorite, the active ingredient. The rest of the powder is made up of calcium and impurities.

Calcium hypochlorite is extremely reactive with anything organic, such as skin, grass clippings, paper, oil and petrol. When mixed with any of these materials it will heat up and may explode.

Calcium hypochlorite should be added slowly to the water if required by hand.

If water is added to the calcium hypochlorite it may erupt.

Dosing

Calcium hypochlorite should be mixed with water to form a solution of a constant strength. This is done with a 'specific' automatic feed system designed for either a solid or granular calcium hypochlorite product in its raw state.

Operators should log the settings which give a free chlorine reading (DPD 1. test) of between 1.5 and 3 milligrams per litre for various conditions.

Concentrations should be avoided as the lines and junctions tend to clog up with calcium deposits.



The chemical feeder will require periodic cleaning to remove the calcium sludge from the bottom. Hot water, gloves and eye protection should be used. (Consult ALIAS P/L)

Calcium hypochlorite may be dry broadcast to control black spot algae, particularly along edges and between tiles

Storage and Handling

Calcium hypochlorite is a potentially dangerous chemical and the following safety guidelines are advised.

Calcium hypochlorite should be stored in a sound container with an air-tight lid, or in the container provided by the supplier.

A dirty container should never be used. Even if it looks clean, a container previously used for paint, grease, solvents, oil, petrol, or other organic matter should not be used.

Calcium hypochlorite should be stored in a very secure, well ventilated and cool dry area. Drums should be stored above the floor away from other chemicals.

Calcium hypochlorite should never be stored near petrol, oil, solvents, cyanuric acid or flammables as accidental mixing with any of these materials will lead to a violent explosion.

Calcium hypochlorite should be kept away from suntan lotions, insecticides, food and petrol.

Drums should never be stored by the door of the plant room such that operators may be trapped in a fire.

Used drums should not be used as rubbish bins as someone may mistakenly place something organic (i.e. paper) into a drum containing calcium hypochlorite causing a fire or explosion.

When handling calcium hypochlorite the following should be worn:

- (a) dry rubber gloves;
- (b) long sleeved shirt or overalls;
- (c) long trousers and work boots or rubber boots;
- (d) goggles or eye protection; and
- (e) preferably a dust mask of appropriate kind.



The container should be opened in subdued light and the chemical carried carefully in a plastic scoop or a small bucket used only for this purpose. The scoop or bucket should be washed and dried after use.

Avoid at all times breathing in the 'dust', once the container has been opened.

Calcium hypochlorite should not be mixed with other pool chemicals as the mixture may explode.

Calcium hypochlorite drums should not be dropped or rolled as friction may ignite the powder.

Spillages should not be swept up. Spilt calcium hypochlorite should never be returned to its container as it may contain organic material. Spills should be cleaned up with copious amounts of water taking care not to wet the calcium hypochlorite in the drums.

If calcium hypochlorite is spilt on clothing, clothes should be removed immediately and immersed in water. It has been known for clothes to ignite spontaneously.

If calcium hypochlorite is ingested the victim should drink copious quantities of milk or water. They should not be encouraged to vomit. Medical attention should be immediately sought. Eyes should be washed with copious quantities of water.

Material safety data sheets must be consulted in emergencies.

All storage areas should be well ventilated.

For emergencies material safety data sheets should be consulted.

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