

### Calcium Hypochlorite(Calcium Process)

**Formula:** Ca(ClO)<sub>2</sub>

**Appearance:** white or slight gray granular, powder, tablet

**Usage:** For bleaching purpose of wood pulp, silk, cloth and fibre. Disinfection and water-treatment. Disinfectant for chemical poisonous and radioactive substance.

**Packing:** Normally in plastic or steel drums lined with inner plastic bag of 45-50kg net each. Can be adaptable in terms of various requirements.

#### Quality Standard:

Index name	Top-grade
Available Chlorine	45% min
Moisture	3% Max
Yearly Loss of active Chlorine	8%
Calcium Chloride	9%
Color	white or light-grey
Shape	power,granular, mixed, or following your demand

More information for calcium hypochlorite as the following:

#### Calcium hypochlorite

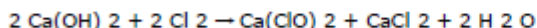
	Calcium hypochlorite
	Identifiers
CAS number	7778-54-3
	Properties
Molecular formula	Ca(ClO) <sub>2</sub>
Molar mass	142.98 g/mol
Melting point	Decomposes at 100°C
Solubility in other solvents	21 g/100 ml (25°C)

**Calcium hypochlorite** is a chemical compound with formula Ca ( Cl O ) 2 . It is widely used for water treatment and as a bleaching agent (bleaching powder). This chemical is considered to be relatively stable and has greater available chlorine than sodium hypochlorite (liquid bleach).

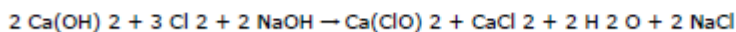
#### Preparation

It is manufactured using the calcium process or the sodium process.

Calcium Process



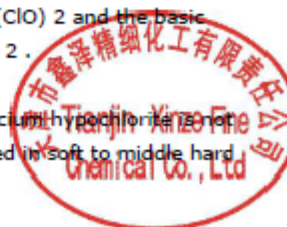
Sodium Process



Bleaching powder is actually a mixture of calcium hypochlorite Ca(ClO)<sub>2</sub> and the basic chloride CaCl<sub>2</sub>, Ca(OH)<sub>2</sub>, H<sub>2</sub>O with some slaked lime, Ca(OH)<sub>2</sub>.

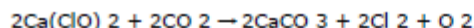
#### Properties

It is a yellow white solid which has a strong smell of chlorine . Calcium hypochlorite is not highly soluble in water. For that reason it should preferably be used in soft to middle hard

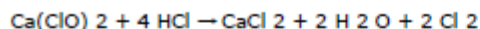


water. There are two types of calcium hypochlorite - a dry form and a hydrated form. The hydrated form is safer to handle.

Calcium hypochlorite reacts with carbon dioxide to form calcium carbonate and release chlorine :



Calcium hypochlorite reacts with hydrochloric acid to form calcium chloride :



Extreme care should be used in handling this product. Always keep in a cool dry place away from any organic material. When mixing it with water, it is safest to add the calcium hypochlorite to water. This material has been known to undergo self heating and rapid decomposition accompanied by the release of toxic chlorine gas.

#### Uses

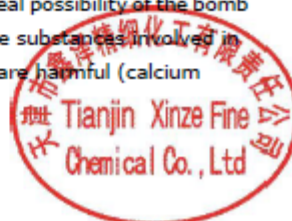
Calcium hypochlorite is used for the disinfection of drinking water or swimming pool water. For use in outdoor swimming pools, calcium hypochlorite can be used as a sanitizer in combination with a cyanuric acid stabilizer. The stabilizer will reduce the loss of chlorine because of UV radiation. Calcium does make the water 'hard' and tends to clog up some filters. However, some types of calcium hypochlorite do contain anti-scaling agents in order to prevent clogging up of pipes/filters. This grade of calcium hypochlorite can also be used in hard waters. The main advantage of calcium hypochlorite is that it is unstabilised unlike chlorinated isocyanurates such as sodium dichloroisocyanurate or trichloroisocyanuric acid. Latter products do contain cyanuric acid. If the level of cyanuric acid becomes too high, it will influence the performance of the chlorine. Pools running on chlorinated isocyanurates should maintain a free chlorine level between 2 and 5 ppm (mg/L), whereas pools running on calcium hypochlorite should have a chlorine level of 1-2 ppm (mg/L).

Calcium hypochlorite (known as 'bleaching powder') is also used for bleaching cotton and linen and is used in the manufacture of chloroform .

Calcium hypochlorite, which is easily obtainable in the form of pool chlorinating agents, has been used to make 'recreational' bombs.

) Due to its oxidising property, calcium hypochlorite can be mixed with readily oxidised substances (eg. glycerine , or glycols from brake fluid ) to make a weak explosive . An alternative is to mix calcium hypochlorite with weak household acids ( cola , vinegar ), a mixture which will not explode but create a large amount of gas, predominantly chlorine . Both variants are prepared by placing an amount of calcium hypochlorite-containing pool chlorinator into a bottle made preferably from plastic, then adding either an easily oxidised or acidic substance, putting the lid on the bottle, shaking it and throwing it away. The amount of gas produced by the chemical reaction of the two substances will eventually (usually after a few seconds) cause the bottle to rupture explosively. When mixed with flammable substances, flames may

be produced as well. While experimenting with 'household' explosive mixtures is obviously a high-risk activity, there are additional dangers. Not only is there a real possibility of the bomb 'going off' earlier than expected and causing serious injury, but the substances involved in the preparation, as well as the products of the chemical reaction, are harmful (calcium



hypochlorite being corrosive , an irritant and strong oxidiser; chlorine gas being highly toxic). Plastic bottles will usually just rupture and not produce shrapnel. Glass bottles, however, will explode into sharp fragments which can seriously injure persons standing nearby.