

# Calcium hypochlorite (CaOCl)

Calcium hypochlorite or solid Chlorine is in white color and in the form of a powder or tablet with a distinct odor. It is produced by reacting chlorine with a solution of lime milk. Calcium hypochlorite is widely used for its disinfecting and oxidizing properties, especially for water treatment applications.

## Concentration

70%-90%

## Molecular weight

143

## Molecular formula

Ca(OCl)<sub>2</sub>

## Characterisitcs

Melting point, 1013 mbar	100 °C
Decomposition temperature, 1013 mbar	175 °C
Density, 20°C	2.35 g/cm
PH	>10
Solubility in water, 25°C	21g/100mL
Ca(ClO) <sub>2</sub>	70-900% by weight
Moisture	5-15% by weight
Ca(OH) <sub>2</sub>	3-5% by weight
CaCl <sub>2</sub>	max 5% by weight (for 90% purity)
CaCo <sub>3</sub>	max 5% by weight (for 70% purity)

## Applications

Calcium hypochlorite appears as a white granular solid (or tablets compressed from the granules) with an odor of chlorine. Toxic, irritating to the skin. Calcium hypochlorite is generally used for swimming pools disinfection and water treatment, bleaching wood pulp, silk, cloth and fiber, disinfectant for chemical poisonous and radioactive substance

## Storage

Calcium hypochlorite is highly corrosive. To prevent damage to installations, contact with metal pipes, valves, meters, etc. must be strictly avoided. Product should not come in contact with acids because of the formation of chlorine gas. Prolonged exposure to fire or heat may result in the vigorous decomposition of the material and rupture of the container. Noncombustible, but will accelerate the burning of combustible materials

## Packaging and transport

Calcium hypochlorite could be packaged in various types of drum, box or Jerri can but bags are not allowed. During the course of transport, these substances shall be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas to prevent any heat build-up. Drums offer the best solution as they provide the largest surface area to be exposed to the surrounding air. This requirement is necessary whether cargo is packed in dry or reefer container.

## Safety and handling

Calcium hypochlorite is a strong bleaching powder with high content of Chlorine. Dry or reefer containers may be used provided that a proper risk assessment is undertaken. Calcium hypochlorite is not flammable, but it acts as an oxidizer with combustible material and may react explosively with ammonia, amines, or organic sulfides. If accidentally mixed with a strong acid as e.g., hydrochloric acid, a sudden outgassing of toxic and corrosive elemental chlorine can occur





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