



Calcium Hypochlorite

Product Stewardship Summary April 2008

| | |
|---------------------|----------------------------|
| Chemical Name: | calcium hypochlorite |
| Synonyms: | cal hypo, bleaching powder |
| CAS Number: | 7681-52-9 |
| CAS Name: | calcium hypochlorite |
| EC (EINECS) Number: | 23 1-668-3 |

- *General Description.* Calcium Hypochlorite is sold as a white, solid concentrate in powder, tablet, briquette, or crystalline form all of which have a distinct chlorine odor. Calcium Hypochlorite is an effective public health biocide registered for numerous sanitization applications by the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act, and supported under the European Biocidal Products Directive.
- *Manufacture.* During production, potential exposure to the concentrate by humans and the environment is tightly controlled and confined through strong industrial hygiene protocols and processes, engineering of the manufacturing equipment, and the use of personal protective equipment.
- *Applications.* Calcium Hypochlorite is a chlorine source, which when mixed with water forms hypochlorous acid and Calcium Hydroxide. The hypochlorous form is used for public health treatments such as: the sanitization of drinking water, sewage, waste water, swimming pools and spas; industrial fruit and vegetable washing; and surface sanitization of meat and poultry plants.

- *Benefits.* Calcium Hypochlorite is an effective sanitizer used for a variety of purposes. Arch manufactures and sells only the dry form of Calcium Hypochlorite which contains a high concentration of available chlorine. Chlorine is a proven, powerful germicide capable of controlling pathogenic and nuisance microorganisms like bacteria, fungi and algae commonly found in water sources. Such untreated water can lead to public health problems associated with bacterial or fungal-related illnesses (infections, rashes and gastrointestinal problems). Even in small amounts, Calcium Hypochlorite is a fast-acting sanitizer protecting the swimmer, bather, and consumer by treating the water. It is also used at higher concentrations to deodorize and remove organic contaminants that can affect the clarity and color of the water. These traits are very important for drinking water, swimming pool, and spa applications. The dry form of Calcium Hypochlorite is more stable and relatively easier to handle and transport than either chlorine gas or liquid bleach.
- *General Precautions.* Calcium Hypochlorite in concentrated form is corrosive to the eyes and skin, and burns may occur within a short time from the onset of exposure. Calcium Hypochlorite in concentrated form is moderately toxic if swallowed. It can cause burns to the digestive tract and has low acute toxicity from skin exposure. In the unlikely event concentrated Calcium Hypochlorite is inhaled for 4 or more hours, it is considered highly toxic. The effects of such inhalation are confined initially to severe irritation to the respiratory tract. In diluted form and in its end-use environment, Calcium Hypochlorite does not pose any significant risk to humans and the environment.

Calcium Hypochlorite does not damage genetic material and is therefore not considered to be a mutagen.

From repeated inhalation exposure of the concentrate, the primary effect from Calcium Hypochlorite is damage to the upper respiratory tract and lungs. Effects from repeated ingestion are irritation to severe irritation of the gastrointestinal tract. Calcium Hypochlorite is not absorbed through the skin in significant amounts; therefore, the only effect from repeated skin contact with the concentrate would be irritation and/or burns.

Calcium Hypochlorite is not a cancer-causing agent.

Calcium Hypochlorite does not impair reproductive performance, fertility, or fetal development.

Calcium Hypochlorite as a concentrate is highly toxic to fish, aquatic invertebrates and aquatic plants; however, once diluted into the end-use applications, it does not pose a significant risk.

The potential for absorption of Calcium Hypochlorite by the body is very low. However, if it is absorbed, it is excreted rapidly with no potential for bioaccumulation.

- *Physical Precautions:* Contamination or improper use may cause fire, explosion, or the release of toxic gases. Do not allow Calcium Hypochlorite to contact any foreign matter, including other water treatment products. If Calcium Hypochlorite is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Users must not add water to this product, but rather add the product only into water. Exposure to heat can cause this product to rapidly decompose, leading to intense fire, explosion, and the release of toxic gases. This product must be stored in a cool, dry, well ventilated area. Calcium Hypochlorite is a strong oxidizing agent. This product can increase fire intensity. This product must be kept away from heat, flame, and burning material.
- *Likelihood of Exposure:* Although most transfers of the chemical are contained in enclosed spaces, exposure to the chemical could occur at a manufacturing facility, treating plant, and site of an accidental release during shipment. End users of Calcium Hypochlorite are unlikely to be exposed when transferring the product from its container to the pool through a floater, feeder, or skimmer. It is important to carefully read and follow all label directions.
- *Risk Management.* The likelihood of exposure to the chemical is low when the end-user carefully reads and follows all label directions for proper use. The risk of adverse effect to health could potentially occur if the concentrated product comes in contact with the skin or if there is significant, direct inhalation, when a container of the concentrated material is opened or during addition to the pool. Once dissolved in pool water, Calcium Hypochlorite will cause no harm to

the bathers in the water and actually protects bathers from harmful waterborne pathogens.

For additional information, please visit our web site at www.archchemicals.com and click on “Contact Us”.

This summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to be, and should not be relied upon as, a substitute for the detailed health and safety information contained in the Material Safety Data Sheet (or any other required hazard communication material) for this product, which should be consulted before use of the chemical or treatment for exposure. As with any product, it is very important to read and carefully follow all label directions and warnings. This summary does not supplant or replace required regulatory and/or legal communication documents.