



Is Cal Hypo Right for Your Pool?

Hidden costs and dangers of calcium hypochlorite

Increased Scale Formation

Calcium hypochlorite (cal hypo) is an unstabilized chlorinating compound. In terms of the amount used, 1.6 lbs of 65% cal hypo provides the same amount of sanitizer as 1 gallon of 12.5% liquid sodium hypochlorite. When you look a bit deeper, you find that cal hypo presents some hidden costs and potential hazards.

Type Chlorine	Dose 10,000 gallons	Free Chlorine ppm	*Cost
Sodium Hypo 12.5%	1 Gallon	12.5 ppm	\$2.50
Calcium Hypo 65%	1.6 lbs.	12.5 ppm	\$3.68

**Costs based on national averages. Cost may vary depending on regional prices*

- Calcium hydroxide is the byproduct from the use of cal hypo. In areas of high hardness, this accelerates the formation of calcium carbonate or scale on pool surfaces, tile and equipment leading to costly repairs and additional maintenance.
- For every 10 ppm of chlorine derived from cal hypo, the calcium hardness is increased by 8 ppm. This leads to increased TDS, draining and dilution.
- Cal hypo raises both pH and total alkalinity so additional muriatic acid is required.

Combustion Accelerant

Cal hypo is a very reactive material that can cause extreme fire and explosion from improper storage or handling.

- Cal hypo is a Class 3 Oxidizer that will cause extreme combustion and fire.
- Contamination of cal hypo with organics such as oil, dirt, soft drinks or perspiration may lead to combustion.
- If mixed with trichlor, there WILL be a violent reaction.
- Tragic fires in transport have occurred when containers of cal hypo have combined with oil or solvent in the trunk of a car.
- The National Association of State Fire Marshalls has stated that retail establishments are not properly equipped to handle a cal hypo fire.
- Strict regulations limit the amount of cal hypo that can be stored and under very restrictive conditions.





TECH POINTS



Incompatible with Common Organic Material and Household Items

Cal hypo becomes combustible when it comes in contact with organic material, any compound that contains carbon. This means that even common household items need to be separated from cal hypo. Many pool chemicals contain organic components so careful attention is required when storing and handling cal hypo.

Damage to Pool Surfaces from Cal Hypo

- Granular cal hypo has low solubility and can cause bleaching of vinyl liner, fiberglass and colored plaster pools if allowed to rest on the pool surface.
- Liquid sodium hypochlorite is 100% soluble and can be used safely in all pools without predissolving.

Effects on Water Clarity

- Cal hypo contains calcium and has a high pH.
- When dissolved in water with a high saturation of calcium, a white "milky" cloud may appear. This can lead to restricted pool use and customer dissatisfaction.
- When using cal hypo shock treatments, the high pH may cause dissolved metals, such as copper to come out of solution leading to colored water and surface staining.

Common Organic Household Items

- Cleaners
- Toilet Bowl Cleaners
- Laundry Detergents
- Metal Polishers
- Carpet Cleaners
- Air Fresheners
- Dish Detergents
- Hand Soaps
- Carbonated Beverages
- Automotive Solvents
- Oil
- Brake Fluid
- Anti-Freeze

Key Performance Comparison of Sodium & Calcium Hypochlorite

	Liquid Sodium Hypo 12.5%	Cal Hypo 65%
Byproduct from use	Sodium chloride	Calcium Hydroxide
Calcium Scale Likely	No	Yes
Increases Hardness	No	Yes
Class 3 Oxidizer	No	Yes
Flammable	No	Yes
Explosive	No	Yes
Solubility in Water	High	Low

References:
 Pool and Spa Operator Handbook 2017-National Swimming Pool Foundation/Pool Hot Tub Alliance-Chapter 5 Disinfection pg. 53-54.
 Pool Operators Manual 1997 Washington State Public Health Association and Washington State Environmental Health Association- Chapter 7 Common Pool Chemicals pg. 66.
 The Complete Swimming Pool Reference Tom Griffiths 1994 – Chapter 7 Chlorination and Bromination pg. 100
 Pool Chemistry For Residential Pools Bob Lowry- Chapter 12 Chlorine Products pg. 121,122, 133, 134, 135.
 Assessing the Fire Performance of Calcium Hypochlorite and the Adequacy of Codes Governing its Storage in Retail Occupancies National Association of State Fire Marshals Catastrophic Fire Prevention Task Force James A. Burns, Chairman Reference: Aquatics International - <https://bit.ly/39EhLOP>



Cal Hypo is a Class 3 Oxidizer & a Combustion Accelerant



1lb of Cal Hypo Adds 8ppm Calcium Hardness in a 10K Gallon Pool



Cal Hypo Dissolves Slowly. Predissolve or Brushing is Important

