



Pulsar® Briquettes

VS

Liquid Bleach

Composition		
Material	Calcium hypochlorite	Liquid Bleach
Appearance	Solid white, pillow shaped briquette	Greenish-yellow, pungent liquid
Chlorine	65% available chlorine (minimum)	10.5-16% chlorine when made fresh Quickly loses strength based on storage conditions
DOT Class	Division 5.1 Oxidizer	Class 8 Corrosive
NFPA 704	H:3; F:0; I:1; S:OX (class 3)	H:3; F:0; I:1; S:0
Performance		
Salt	Reduce the need for adding calcium chloride because calcium hypochlorite contains calcium chloride and other soluble calcium salts	Adds almost 2 lbs. of salt per gallon of bleach, making pool surfaces and equipment susceptible to damage, and increases TDS.
Maintenance	Contains a scale inhibitor designed to reduce maintenance and improve reliability of the chlorinator systems	Lack of calcium means pools may require calcium chloride applications to protect grout from dissolving and plaster from etching
TDS	Contributes less TDS, requiring less draining of some pool volume annually	Sodium chlorate is a by-product as the bleach degrades
pH	Requires low level of pH correction. Water is clear, bright and sparkling.	May require 2X as much pH correction, increasing operating costs. High pH contributes to scaling and cloudiness in hard water.
Water Clarity		
Stability	Anti-scale formulation will not cause over stabilization and will provide continuous chlorination effectively	Wide variety of raw material (caustic soda) quality can lead to impurities (i.e. the presence of metal ions), cause quicker degradation, and affect product stability
Chlorine Gas	Decreased risk of formation	Increased risk of formation



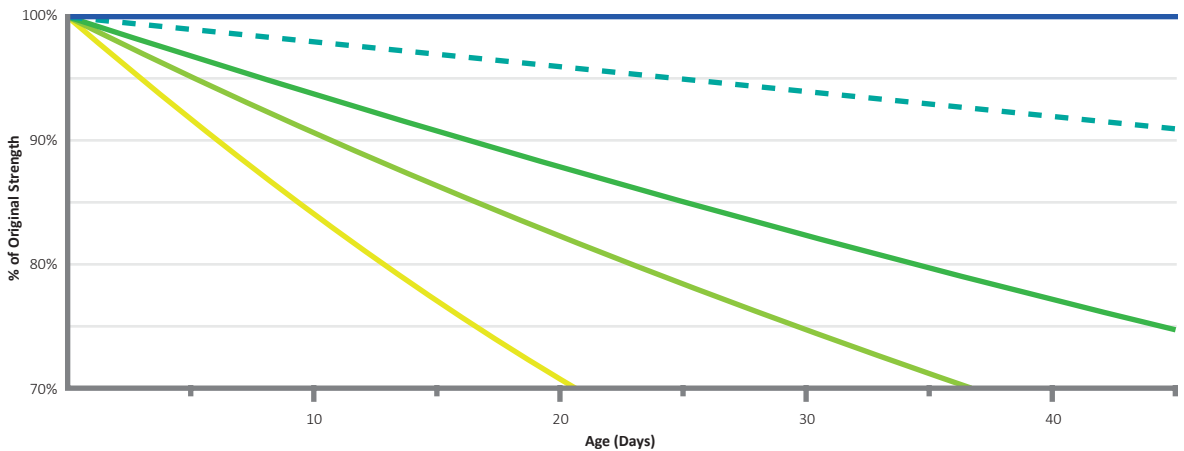
Storage, Transportation, and Handling

Strength	5-6 times more concentrated than liquid bleach.	Suffers a continuous loss of chemical strength making dosing more challenging.
Shelf Life	Averages a 1 yr. shelf life Up to 7% loss of strength after 1 year under normal storage conditions	90 day shelf life at room temperature A strong 15% solution will suffer 30% loss of strength after 21 days of storage at 85°F
Transport	Up to 999 lbs. of cal-hypo can be transported with no hazmat placarding	Bulk tanks are hard for end users to move around and take up a lot of space
Storage	Stackable pallets of product reduce space requirements compared to storing bulk tanks	Mostly made up of water. Large volumes of product are needed due to low concentrations of active chlorine. High transportation costs.

Stability Comparison

Pulsar® Briquettes vs Liquid Bleach at 85°F

- Calcium Hypochlorite (linear)
- 5 tr. % initial (linear)
- 10 tr. % initial (exponential)
- 12 tr. % initial (exponential)
- 15 tr. % initial (exponential)



The Splash-Free Way

- CDC reports that as many as 5,200 ER visits per year are due to pool chemical related injuries
- Pulsar® Briquettes are a dry product so no splashing (causes damage to vehicles and pump rooms) and product stays dry until water enters feeder.
- Store off the ground in cool, dry, well-ventilated areas.
- Requires minimal operator dosage adjustments since solution is produced automatically