



GRANULAR CALCIUM HYPOCHLORITE

68% AVAILABLE CHLORINE

PRODUCT DATA BULLETIN

HTH® Dry Chlorinator is calcium hypochlorite, $\text{Ca}(\text{OCl})_2 \cdot 2\text{H}_2\text{O}$ containing 68% available chlorine. It is convenient and easy to handle. It requires less storage space and has significantly longer shelf-life than liquid sanitizers. The product is available as free-flowing granules in a variety of package sizes.

Properties

HTH® Dry Chlorinator is Arch Chemicals premier brand. Product quality is assured by rigorous attention to the chemical and physical properties. This attention assures that you will be able to depend on HTH® Dry Chlorinator to provide consistent performance in your process time after time. Specifications and typical properties are shown in the tables below.

Properties of HTH® Dry Chlorinator		
	Specification	Typical Analysis
Available Chlorine (% by weight)	65%, min	68%
Water (% by weight)	5.5 - 8.5%	7.9%
Iron (% by weight as Fe)	0.05%, max	0.02%
Particle Size, US Standard Sieves		
on 10 (2.00 mm)	0.5%, max	<0.1%
on 14 (1.41 mm)	25%, max	9.2%
through 100 (0.15 mm)	3%, max	0.2%
Loose Bulk Density, g/mL	0.8, min	0.92
Solubility in water, g/L	--	180
Solution pH		
200 ppm avail. chlorine	--	10
500 ppm avail. chlorine	--	10.3
1000 ppm avail. chlorine	--	10.7
1% avail. chlorine	--	11.1
Specific Gravity of solutions		
1%	--	1.01
2%	--	1.03
5%	--	1.06
10%	--	1.11

Analytical

Concentrations of HTH® Dry Chlorinator solutions may be determined by titration. See methods for chlorine (residual) in the latest edition of *Standard Methods for the Examination of Water and Wastewater*, prepared and published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation.

Applications

HTH® Dry Chlorinator is a ready and convenient source of available chlorine, suitable for use in applications where the disinfecting and oxidizing power of chlorine are needed. As a free-flowing solid it is easily measured and handled, and it does not require operators to handle gas cylinders or large volumes of liquids. HTH® Dry Chlorinator has been registered and listed with the appropriate authorities for many applications. Some of these are listed in the table below. Arch Chemicals has available further information on many of these uses as well as others, and new literature is continually prepared. Ask your Arch Chemicals representative for information on your application.

Applications for HTH® Dry Chlorinator		
	Registered*, listed*	Data Sheet
Aquaculture	✓	HTHADS00-1
Beverage bottling	✓	HTHADS00-2
Brewing	✓	HTHADS00-2
Canneries	✓	HTHADS00-3
Clinical Pools	✓	HTHADS00-4
Cooling Water	✓	HTHADS00-5
Dairy Plants	✓	HTHADS00-3
Fish and Shellfish Processing	✓	HTHADS00-1
Hard Surface Cleaning	✓	HTHADS00-6
Industrial Wastewater	✓	HTHADS00-5
Laundries	✓	HTHADS00-6
Meat Processing	✓	HTHADS00-3
Mold and Mildew Removal	✓	HTHADS00-6
Municipal Water Treatment	✓	HTHADS00-7
Orchards	✓	HTHADS00-3
Poultry Plants	✓	HTHADS00-3
Private water supplies	✓	HTHADS00-8
Pulp and Paper Plants	✓	HTHADS00-5
Restaurant Utensils	✓	HTHADS00-6
Sewage effluent	✓	HTHADS00-5
Swimming Pools, Spas and Hot Tubs	✓	Contact your Arch Chemicals representative
Tanneries	✓	HTHADS00-5
Vegetable Production and Processing	✓	HTHADS00-3
Vineyards, wineries	✓	HTHADS00-2
Other applications	✓	Contact your Arch Chemicals representative

*See Regulatory Information, below, for partial description. Always check with local authorities to assure compliance with all applicable regulations.

Preparation of Solutions

While it is possible to prepare solutions of calcium hypochlorite containing 180 g/L (18%) of product, practical working solutions for most applications range from 200 ppm up to 5% available chlorine. Once you have determined the concentration appropriate for your application, you may consult the instructions below for its preparation.

NOTE: Stock solutions should be freshly prepared and kept in properly labeled containers to protect against contamination.

Determination of HTH® Dry Chlorinator Amount Needed:

To prepare the proper strength solution, first calculate the volume of the holding tank, and then use the tables below to determine the required amount of HTH® Dry Chlorinator that must be added to the water to obtain the desired solution strength.

Weight of HTH® Dry Chlorinator Required to Prepare Various Strength Solutions

Concentration Available Chlorine Desired	Volume of Water in Liters			
	100	200	500	1000
	Weight of HTH Dry Chlorinator Required (in kg unless otherwise noted)			
200 ppm	30.8g	61.5g	0.154	0.308
0.1%	0.15	0.31	0.77	1.54
1.0%	1.54	3.08	7.69	15.39
1.5%	2.31	4.62	11.54	23.08
2.0%	3.08	6.15	15.39	30.77
2.5%	3.85	7.69	19.23	38.46
3.0%	4.62	9.23	23.08	46.16
4.0%	6.15	12.31	30.77	61.54
5.0%	7.69	15.39	38.46	76.93

Preparing an HTH® Dry Chlorinator Solution:

HTH® Dry Chlorinator solutions should be made up in clean polyethylene containers. **Add the required volume of water first.** Then add the required amount of HTH® Dry Chlorinator to the water. Stir with a clean wooden or metal stirrer, making sure to keep it away from clothing, skin and eyes. Some carbonates in the water will precipitate to the bottom of the container, as will the small amount of insolubles present in HTH® Dry Chlorinator. The total amount of precipitate will always exceed the insolubles present in HTH® Dry Chlorinator.

NOTE: Always add HTH® Dry Chlorinator to water. Do not reverse this procedure since a rapid evolution of heat may occur, possibly resulting in splattering or even explosion if the container is closed.

The resulting solution can be poured into another container, or can be fed from the same container, providing the mouth of the line to the chemical feed pump is kept above the precipitate level.

Safety and Handling

A brief synopsis of safety information for HTH® Dry Chlorinator is provided below. **Always read and follow label instructions and precautions.** For complete, up-to-date information on safety, obtain the current Material Safety Data Sheet (MSDS) by contacting your Arch Chemicals Sales Office.

Storage

HTH® Dry Chlorinator should always be stored in tightly sealed containers, and in a cool, dry, well-ventilated area. Keep the product away from open flame, combustible materials and other chemicals. Since it is a strong oxidizing agent, it should not be stored near organic materials, acids, corrosive liquids, other oxidizers, or any reactive material.

Handling

HTH® Dry Chlorinator is a strong oxidizing agent. Use only clean, dry utensils for measuring and transferring HTH® Dry Chlorinator. **Mix only into cold water by adding HTH® Dry Chlorinator to water.** Do not reverse this procedure since a rapid evolution of heat may occur, possibly resulting in splattering, or explosion if in a confined area.

Contact with household products, acids, oils, paint products, chemicals (including other pool chemicals), or other foreign materials may cause intense fires, explosion, or hazardous gases. Prevent burning material such as a lighted cigarette from contacting HTH® Dry Chlorinator.

Personnel Protection

Personnel handling HTH® Dry Chlorinator should avoid getting it into eyes, on skin or on clothing, and should not breathe the dust. Always use with adequate ventilation, and when handling in volume, wear goggles, coveralls, neoprene gloves and boots, and a full face-piece respirator with chlorine cartridges and dust/mist filter. Remove contaminated clothing and wash before reuse.

First Aid

Skin or eyes: Immediately flush with large amounts of cold water for at least 15 minutes. Call a physician.

Ingestion: Immediately drink large quantities of water. Do not induce vomiting. Call a physician.

Inhalation: Immediately remove victim to fresh air. Call a physician.

IN THE EVENT OF FIRE

Contact emergency personnel immediately. If HTH® Dry Chlorinator is threatened by fire, cool exposed containers with large volumes of water. **Do not use dry chemical extinguishers.** If HTH® Dry Chlorinator is involved in a fire, use large volumes of water to extinguish. Firefighters should use air-independent respiratory equipment.

Spill and Leak Procedures

Remove all sources of ignition. Wear a dust and chlorine respirator (see Personnel protection above). Wear goggles, coveralls, and rubber, neoprene or PVC gloves and boots. Clean up in a manner to minimize contamination with organic material. Do not return spilled material to original container. Place in a fresh container and isolate outside or in a well ventilated area. Do not seal the container. Call Arch Chemicals for disposal instructions. Flush any residual material with large quantities of water. Wash all contaminated clothing before reuse. In the event of a large spill call 1-423-780-2970 in the USA.

Disposal

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues, and mixtures which contain this material as well as containers in which the material is mixed or stored in compliance with all relevant laws and regulations regarding shipment, treatment, storage, and disposal for hazardous and nonhazardous wastes.

Regulatory Information

For HTH® Dry Chlorinator, granular, the DOT description from the Hazardous Materials Table 49 CFR 172 is: Calcium Hypochlorite, Hydrated, Oxidizer 5.1, UN 2880, PG II.

HTH® Dry Chlorinator meets the American Water Works Association Standard for Hypochlorites (AWWA B300-92) for use in treatment of municipal and industrial water supplies. It also meets AWWA standards for use in disinfecting water mains, water-storage facilities, water treatment plants and wells (AWWA C651-92, C652-92, C653-95, and C654-95.)

HTH® Dry Chlorinator meets Federal Specification O-C-114B for calcium hypochlorite used in military applications. It has been registered with the US Environmental Protection Agency (EPA) for a wide range of uses. There are USDA and FDA listings as well as international registrations for HTH dry chlorinator. For additional information on regulatory status of your use for calcium hypochlorite, contact your distributor or write or fax Arch Chemicals, Inc. at the address below, fax number in USA 1-770-970-4096. Refer to AD number 6158-0800 in your inquiry.

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