

ALGAE OUT. FUN IN.

RELY ON ADVANCED APCA ALGAE CONTROL FROM BUCKMAN.

There's nothing more inviting than a clear, clean swimming pool or spa. Keep it that way with APCA Algae Control from Buckman. It works in synergy with your chlorine treatments to provide superior, longer lasting protection from algae and bacteria. And that means you can reduce the time and effort required for pool maintenance, help ensure high pool user satisfaction, and lower your overall costs.

Try APCA and you'll see why it's the clear choice for superior algae control.

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WITH APCA, THE ONLY THING THAT GROWS IS SWIMMER SATISFACTION.

Algae growth is enemy number one. Fortunately, you need only one solution to stop it—APCA Algae Control from Buckman. While chlorine oxidizes to kill bacteria, APCA Algae Control from Buckman has a polymeric structure with a cationic charge that gives it the power to suffocate cells, making it effective over more complex species, including algae and macrophages. It improves clarification, too.

With APCA, swimmers can enjoy a cleaner pool and reduced maintenance worries, while pool service providers can ensure a high level of customer satisfaction at a lower cost.

CLEARLY BETTER AT CONTROLLING ALGAE.

Longer-lasting protection.

APCA provides effective control of green free-floating algae, the black algae that cling to the walls and bottoms of pools, and the mustard algae that grow in shade. It kills bacteria, as well, including *Legionella**. And it helps keep new bacteria from forming. Best of all, APCA is formulated to last, providing effective control for a longer period of time than other chemistries.

For all types of pools.

APCA works equally well in gunite and liner pools, halogenated and saline waters, and all commonly used filters, including sand, cartridge and diatomaceous earth systems. It's easily measured and applied and performs well in slug doses, even once per week.

WHEN IT COMES TO WATER TECHNOLOGIES, NOBODY DIVES DEEPER.

Buckman is a global leader in water treatment technologies, so nobody understands pool chemistry better. In-depth research, testing and refinement yield pool products that are more effective, easy to use and cost-efficient. That's why pool maintenance professionals working in residential, hotel, college, private club, and other environments rely on our products and expertise. And why you can look to Buckman to help you successfully control the algae, scum, staining, and harmful scale buildup that can undermine pool performance.

MAKE A BIG SPLASH THIS POOL SEASON.

Turn to Buckman, APCA Algae Control, and our extensive line of other recreational water applications to keep water clear, surfaces clean, and equipment functioning smoothly all season long. For more information, contact your Buckman representative or visit us at buckman.com.

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Composition

60% water solution of ethanamine, N-methyl-, polymer with 2-(chloromethyl)oxirane (CAS: 25988-97-0).

European Biocidal Products Regulation

Buckman is an approved supplier for APCA, according to the European Biocidal Products Regulation BPR 528/2012.

APCA Features

- APCA is a highly cationic polymeric biocide.
- Great effectiveness against algae.
- Moderate bactericide effect, including *Legionella pneumophila**.
- Low mould/yeast effect.
- Some coagulating properties.
- Best product to effectively eliminate algae and thus improve bacterial control, a typical problem in water exposed to air/sun.
- It improves clarification of water.
- Can be easily (and at low cost) measured.
- It has a long-lasting effect, due to polymer low degradability and persistence.
- It is toxic to fish, beware of blowdowns and wastewaters.
- Effective slug dosages, 1-2 ppm, 1 dosage per week.
- It can be used in a "seasonal" program (summer).
- Killing of algae and flocculation of the suspended solids will improve cleanliness; thus making further development of bacteria difficult.
- It is highly cationic. It reacts with anionics (polyacrylates). Must not be dosed together. APCA is a stable molecule over a wide pH (4-10).
- APCA is miscible and compatible with other biocides, hence increasing performance (complementary effects):
 - Bulab® 6024: APCA.
 - ISCA: APCA + isothiazolones.
 - BRCA: APCA + bronopol.
 - Bulab 6164: APCA + CABQ.
 - Winterization programs: APCA (50%)+PHOS 2 (30%, phosphonate ATMP), dosage: 5-8 g/m³.
- It is synergic with chlorine, because of their different mode of actions and persistence. Compatible in application dosages with oxidants. Not to mix concentrate:
 - Different mode of action:
 - Oxidants act quickly by oxidizing cell membrane, killing bacteria.
 - APCA kills by suffocation due to its polymeric structure and cationic charge, being effective over more complex species (algae, macrophages).
 - Different mode of action:
 - Oxidants degrade quickly.
 - APCA persists in the water for a long time, keeping hygienic conditions for a longer time.

Low impurities profile:

- 1-chlorine-2,3-epoxypropane (CAS 106-89-8): < 0.1%
- 1,3-dichloropropan-2-ol (CAS 96-23-1): < 0.1%
- Dimethylamine (CAS 124-40-3): < 0.1%

Easy on-site residual analytical method

*Legionella pneumophila**: External certification complies with EN 13623:2011 against *Legionella pneumophila* NCTC 11192 (ATCC 33152) after 15 contact hours at 200 ppm

**Buckman Laboratories N.V. and its Subsidiaries, Affiliates and Branch Offices uses best practices in developing and maintaining products. While it aims to provide products and services for effective slime deposit control; it does not guarantee results. In particular but without limitation, it does aim at but does not guarantee Legionella control within limits established by national legislation and shall not be responsible for any results as regards to Legionella or Legionella counts being within or outside acceptable count levels.*

Said Legionella counts shall be sampled and analysed by a registered laboratory; accepted by both BL and the customer, at such times, according to such time schedules and pursuant to such methodology as shall be satisfactory to both parties.

Name	Organism	pH/MIC in ppm product	Medium
APCA	<i>Enterobacter aerogenes</i>	pH 6: 1 pH 8: 1	Basal salts medium
	<i>Sphaerotilus natans</i>	pH 7: 5	Stokes agar by plate count /18 hours at 28°C
	<i>Desulfovibrio desulfuricans</i>	pH 7: 80	API Bottle SRB Test
	<i>Desulfovibrio desulfuricans</i>	pH 7: >500	Bactometer SRB test
	<i>Pityrosporum ovale</i>	pH 7: >100 ppm ai	Brain heart infusion broth
	<i>Aspergillus niger</i>	pH 6: >100 ai	Mineral salts medium
	<i>Penicillium expansum</i>	pH 6: >100 ai	Mineral salts medium
	<i>Chlorella vulgaris</i>	pH 7: 1 ai	Algal Medium
	<i>Chlorococcum hypnosporum</i>	pH 7: 1 ai	Algal medium
	<i>Phormidium autumnale</i>	pH 7: 1 ai	Algal medium
	<i>Pseudomonas aeruginosa</i>	20 ppm	New (99) pulp substrate test
	<i>K. pneumoniae</i>	100 ppm	Reg. Tube test
	<i>P. aeruginosa</i>	10.98 hrs at 50 ppm	D-value
	<i>P. aeruginosa</i>	11.19 at 200 ppm	D-value
	<i>Clostridium perfringens</i>	>2000	Clostridial test

MIC: Comprehensive Minimum Inhibitory Concentration data:

- MIC: Minimum Inhibitory Concentration.
- Minimum concentration of a biocide needed to avoid further increase of microbial population.
- MKC: Minimum Killing Concentration.
- Minimum concentration of a biocide needed to effectively kill microbes to a certain level.
- Usually MKC is 10-100 times bigger than MIC.
- Cleaning/disinfection is related with MKC, while maintenance/control is related with MIC.

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Seller warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions. Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including **NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE**. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty. The exclusive remedy against seller shall be a claim for damages not to exceed the purchase price of the product, without regard to whether such a claim is based upon breach of warranty or tort. E543EUR-H (05/17)

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