



Spa Water Purification using the advanced Cleanwater Blue™ System

The odor-free alternative to chlorine & bromine. Provides crystal clear, clean, sparkling spa water without the problems of irritated skin, red eyes, harsh fumes, while reducing maintenance intervals.



History of Copper Purification

The active ingredient in Cleanwater Blue is natural copper ions. The benefits of copper purification have been known for centuries. The early Egyptians discovered that water stored in copper vessels stayed fresher for longer periods of time, although they knew nothing of copper ions or microbiology, nor how to maximize copper's purification potential.

Pony Express riders found that placing copper pennies in their water bags seemed to help prevent stagnation, but they too, did not really understand why.

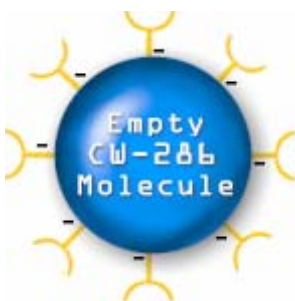
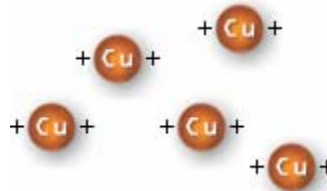
In modern times, copper has been used extensively for algae control in spas and pools, but traditional copper products had two big drawbacks: although they were good at controlling algae, they were ineffective in eliminating bacteria because they could not be kept in suspension at the right concentration, and they tended to cause staining problems. Manufacturers tried to solve the staining problem by a process called *chelation* (a way to bind up the copper ions to keep them in suspension). Unfortunately, chelated copper products reduce the biological activity of the copper ion, making it ineffective in controlling bacteria.

Chlorine & Bromine

These limitations of traditional copper products no doubt helped lead to the proliferation of chlorine and bromine sanitizers. Chlorine and bromine are harsh oxidizers and are indeed effective in controlling algae and bacteria. However, the properties that make these products effective for purification, are the same properties that make them unpleasant for humans. Chlorine and bromine can emit harsh fumes, can cause dry skin and red eyes, and may lead to other problems for people. A safe and effective alternative to chlorine and bromine was needed.

Natural Copper Ions

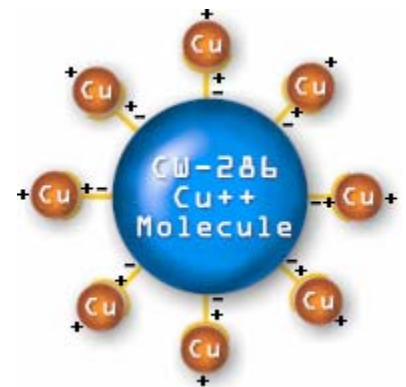
The copper ions used to create Cleanwater Blue have two positive charges. The challenge for biochemists was to develop a technology for keeping these ions in suspension so that they remain biologically active, and at the same time, do not lead to staining problems.



CW-286 Carrier Molecule

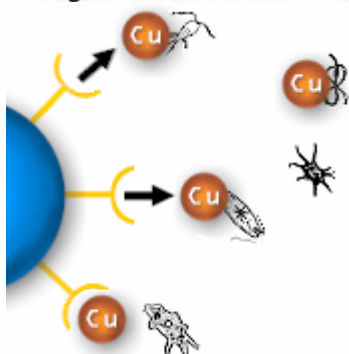
After years of research, the development of CW-286, a special carrier agent, was the solution to copper ion purification.

CW-286 has a large number of negatively charged attachment points. One of each copper ion's positive charges attaches to the CW-286 molecule, leaving the other positive charge biologically available to combine with an algae or bacteria cell. CW-286 + copper ions = Cleanwater Blue.



Fully loaded with copper ions, the CW-286 Cu++ molecule remains fully dissolved in spa water, potentiated to be nearly 100% biologically active to kill algae and bacteria.

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Cleanwater Blue Destroys Algae & Bacteria

When waterborne algae and bacteria come into contact with Cleanwater Blue's copper ions, the copper is instantly released from the CW-286 carrier molecule and absorbed into the cell nucleus. Copper naturally disrupts the cell structure, reproduction is halted, and the organisms die.

Once the copper is complexed with the organic matter, it is no longer measurable in the the spa water. The dead organic matter can then be easily oxidized away using non-chlorine MPS shock.

Cleanwater Blue is compatible with chlorine, bromine, and ozone.

Another unique property of Cleanwater Blue is its self-dispersing ability. Because it is comprised of ions with double positive charges, they repel each other and disperse throughout the spa, even without water circulation. Unlike other systems, Cleanwater Blue does not require running your pump for long hours to be effective.

The Essential Companion Products:

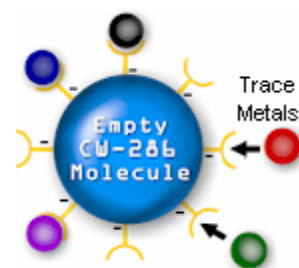


The CW-286 carrier molecule has an affinity not only for copper, but for other minerals present in the spa water such as calcium. Calcium can sometimes take up copper "parking places" or attachment points on the CW-286 molecule, and set the copper free in the water. When this happens, there is a potential for staining problems, and the effectiveness of Cleanwater Blue is also reduced. For this reason, Cleanwater Prep Calcium Sequestrant was developed. Cleanwater Prep, added prior to Cleanwater Blue, separates the excess calcium from spa water and deposits it to the filter.

It is essential to clean the filter after using Cleanwater Prep, or the calcium you've captured will work its way back into the spa water. Cleanwater Prep is vital at startup, but should also be used regularly in areas where calcium hardness levels are high (300 PPM or more) such as well water.



Maintaining quality spa water requires the addition of stain, metal, and scale reducers. However, if conventional stain & scale products are added, they will also remove the beneficial copper ions of Cleanwater Blue, rendering it ineffective. The solution is Cleanwater Purge, which is comprised of empty CW-286 molecules, much like Cleanwater Blue, but without the attached copper ions. Cleanwater Purge is first needed and added after two weeks.



Cleanwater Purge ties-up stray metals and also provides extra attachment points for any stray copper ions. This prevents staining problems. Cleanwater Purge is the only stain, scale, and metal product compatible with Cleanwater Blue. Cleanwater Purge also "recharges" the effectiveness of Cleanwater Blue.



Cleanwater Blue 3-Way Test Strips

Required for testing the copper ion level of Cleanwater Blue. Also measures Total Alkalinity (TA) and pH, to allow you to easily and correctly balance your water. Since you only need to measure the low-maintenance Cleanwater Blue System twice per month, one bottle of 25 test strips will last about a year.