DuoClear Cartridge

FOR INGROUND POOLS

The Low Chlorine Alternative*
Destroys bacteria with CRT

ACTIVE INGREDIENTS:
- Metallic-Silver* ........................................... 5.50%
- Copper Nitrate Crystaline*** .......................... 2.00%
- Inert Ingredients ........................................... 82.50%
- TOTAL.................................................. 100.00%
**Total Silver Content
***Copper Oxide Metalic
*The Nature2 System consists of the patented Nature2 Technology, used in conjunction with a chlorax delivery device or a water treatment system approved by the EPA for use in swimming pools and spa systems.

KEEP OUT OF REACH OF CHILDREN
CAUTION

See back panel for additional precautionary statements.

NET CONTENTS:
ONE CARTRIDGE

EPA Part No: 07720-1
EPA Est. No: 87712-CA-001

The Low Chlorine Alternative*
Nature2 water is brilliantly clear and soft
- Reduces potential for stinging eyes, skin irritation, and unpleasant odors
- Enhances swimmer comfort
- Lower chlorine levels help keep the pool pH balanced

It's Compatible
- Compatible with most pool maintenance products***
- Will not damage your pool equipment

***Do not use Nature2 DuoClear Cartridge with copper-based shockers or oxidizers.
PRECAUTIONARY STATEMENT
Hazards to Humans and Domestic Animals.

CAUTION
In the unlikely event that a cartridge breaks, mineral media should not be ingested by humans or animals as it may cause gastric distress.

FIRST AID
IF INGESTED: Call poison control center or doctor immediately for treatment advice.

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling. See owner’s manual inside box for directions for use.

DISPOSAL
After six (6) months of use, discard cartridge in household trash. Do not save the cartridge for re-use. The cartridge is manufactured with mineral media sealed inside. In the unlikely event a cartridge breaks, remove it and vacuum out any media introduced into the pool water.

CHANGE THIS CARTRIDGE EVERY SIX (6) MONTHS
Use of this cartridge for longer than six (6) continuous months will void the warranty. Discard this cartridge at the end of six months.

The Mineral Pool Sanitizer
Controlled Release Technology (CRT) controls the release of silver and copper minerals into your pool water.
The Nature2® System® with CRT effectively sanitizes your pool:
• Destroys bacteria
• Restores water clarity
• Reduces chlorine use to just 0.5 ppm
To keep your patented Nature2® Sanitizer operating properly, it is necessary to change the cartridge every six (6) months.
We ask you to take the time to get familiar with this manual.
Thank you for purchasing a DuoClear Cartridge with Nature2 Technology. We believe the more you know, the more enjoyable your family's swimming experience will be — and the more you will reduce the time, effort and cost of maintaining your pool. Pool owners who switch from conventional chemical programs to the DuoClear System spend less time maintaining their pools. Every pool has its own characteristics of water type, amount of sunlight, etc. The recipe included in this manual will help insure good water quality for your pool. Remember, your Nature2 dealer can provide advice and service.

Safety Instructions - Important Information

DuoClear Cartridges have been designed to sanitize swimming pools from 10,000 to 45,000 gallons depending on cartridge model. Make sure that your DuoClear Cartridge corresponds with the proper vessel and is appropriate for your pool size by consulting the chart above.

**ATTENTION**

**Failure to heed the following can result in permanent injury, or drowning.**

**EQUIPMENT UNDER PRESSURE**
- Always turn pump off prior to installing or changing DuoClear cartridge. Your pump/filter system is operated under pressure and the pressure must be released before you begin work. Please see your pump/filter owner’s manual for further instructions.

**PREVENT CHILD DROWNING**
- Do not let anyone, especially small children, sit, step, lean or climb on any equipment installed as part of your pool’s operational system. Locate the components of your operational system at least 3 feet from the pool so children cannot use the equipment to access the pool and be injured or drown.

**LOW CHLORINE RECIPE**
- You must strictly follow the low chlorine recipe included in this manual to maintain proper water chemistry and avoid health hazards. Failure to follow these instructions can lead to sickness from bacteria and other noxious organisms.

The DuoClear Pool Sanitizer is designed only for residential swimming pools.

*The DuoClear System consists of the patented Nature2 technology used in conjunction with a chlorine delivery device or 0.5 ppm of an EPA registered chlorine pool product.

*Nature2 technology consists of the minerals silver and copper.

**CAUTION**

**PRECAUTIONARY STATEMENT**
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION**

In the unlikely event that a cartridge breaks, mineral media should not be ingested by humans or animals as it may cause gastric distress.

**FIRST AID**
IF INGESTED: Call poison control center or doctor immediately for treatment advice.
**DIRECTIONS FOR USE:**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**DUOCLEAR® COMPATIBILITY**

DuoClear Systems® can be used with all types of pool chemical treatments available except biguanide products and copper based algaecides.

**Important:** When converting either a biguanide or bromine treated pool to the DuoClear System, the pool must be completely drained and refilled. Then follow the DuoClear cartridge start-up procedure below.

**Start Up**

• Before starting up a new DuoClear cartridge, clean debris and algae out of the pool and pool equipment.

**Important:** Do not install the new cartridge until the pool water is clean and chemically balanced.

• Balance pool water before installing DuoClear cartridge.
  - pH 7.4-7.8
  - Calcium hardness 200-400 ppm
  - Total alkalinity 80-150 ppm

Consult with your Nature2® Dealer for specific water balance instructions.

**Balance the Water**

To find out if your pool water is balanced:

- take a water sample to your dealer to be tested regularly, or
- ask your dealer to recommend a pool test kit for water balance.

<table>
<thead>
<tr>
<th>Element: pH</th>
<th>If it’s too low: The surface of your pool can become etched. Metal parts in the pump and plumbing will corrode.</th>
<th>How to fix: Add pH increaser.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 7.4-7.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element: Calcium Hardness</td>
<td>Water is less stable. In plaster pools, the calcium is taken out of the plaster, causing the surface to deteriorate.</td>
<td>How to fix: Add calcium hardness increaser.</td>
</tr>
<tr>
<td>Range: 200-400 ppm</td>
<td>If it’s too high: Rough, discolored deposits (&quot;scale&quot;) will form on the pool surface and inside pool equipment.</td>
<td>How to fix: Drain or dilute the pool water. Consult your dealer.</td>
</tr>
<tr>
<td>Element: Total Alkalinity</td>
<td>It provides no buffer so that you constantly get fluctuating pH readings, which can damage equipment and pool surfaces.</td>
<td>How to fix: Use an alkalinity increaser.</td>
</tr>
<tr>
<td>Range: 80-150 ppm</td>
<td>If it’s too low: White deposits (&quot;scale&quot;) form on the tile line. The plaster on pool surface becomes rough or discolored. The water becomes cloudy or milky white.</td>
<td>How to fix: Add acid to bring alkalinity down.</td>
</tr>
</tbody>
</table>
Install the Cartridge

1. Install the cartridge after water is balanced. Refer to your DuoClear® vessel operating manual for additional instructions regarding your particular model's installation.

2. Superoxidize the pool water with chlorine according to manufacturer's instructions to burn off contaminants and activate cartridge.

   **Important:** Initial superoxidation with chlorine is required to burn off contaminants and activate cartridge.

3. Run the circulating pump either:
   - 24 hours a day for 4 days, maintaining 1-2 ppm free chlorine throughout, or
   - 6 hours a day for 14 days, maintaining 1-2 ppm free chlorine throughout.

4. Let chlorine dissipate to 0.5 ppm once start up period is completed.
   - Do not enter the pool if the free available chlorine residual is over 3 ppm.

Recipe

There is one (1) recipe for maintaining clean, clear, sanitized water with minimum time and effort.

This recipe provides the easiest and most economical way to care for your DuoClear pool.

**Low-Chlorine Recipe**

Ingredients:
- DuoClear Cartridge
- Chlorine granules, tablets, liquid or generator
- pH and total alkalinity adjusting chemicals
- Calcium hardness increaser, if needed
- Water test kit

Once the 4-day or 14-day start-up period is done, allow the free available chlorine residual to drop to 0.5 ppm (by reducing the amount of chlorine you add) then:

<table>
<thead>
<tr>
<th>When:</th>
<th>What to do:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>Run pump and filter at least six (6) hours every day.</td>
</tr>
<tr>
<td>Once a week</td>
<td>Balance pH and total alkalinity.</td>
</tr>
<tr>
<td>Twice a week</td>
<td>Check chlorine residual; add chlorine to maintain at least a 0.5 ppm range using the chart below.</td>
</tr>
<tr>
<td>As needed</td>
<td>If water is hazy, superoxidize with chlorine according to manufacturer’s instructions. Additional shocking is recommended following rainstorms or heavy bather load. Do not re-enter the pool if the free available chlorine residual is over 3 ppm.</td>
</tr>
</tbody>
</table>

Add the following amounts of chlorine per 10,000 gallons of water to increase free chlorine by 0.5 ppm.

<table>
<thead>
<tr>
<th>Type of Chlorine Containing Compound</th>
<th>% Active Ingredient</th>
<th>% Available Chlorine Content</th>
<th>Ounce Quantity Required</th>
<th>Gram Quantity Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hypochlorite Liquid</td>
<td>5.25</td>
<td>5.25</td>
<td>12.7</td>
<td>361</td>
</tr>
<tr>
<td>Sodium Hypochlorite Liquid</td>
<td>9.2</td>
<td>9.2</td>
<td>7.3</td>
<td>206</td>
</tr>
<tr>
<td>Sodium Hypochlorite Liquid</td>
<td>10</td>
<td>10</td>
<td>6.5</td>
<td>184</td>
</tr>
<tr>
<td>Sodium Hypochlorite Liquid</td>
<td>12</td>
<td>12</td>
<td>5.6</td>
<td>158</td>
</tr>
<tr>
<td>Calcium Hypochlorite</td>
<td>65</td>
<td>64</td>
<td>1.1</td>
<td>30</td>
</tr>
<tr>
<td>Dichloroisocyanurate</td>
<td>99</td>
<td>62</td>
<td>1.1</td>
<td>30</td>
</tr>
<tr>
<td>Lithium Hypochlorite</td>
<td>29</td>
<td>25</td>
<td>1.9</td>
<td>54</td>
</tr>
<tr>
<td>Trichloro-triazinetrone</td>
<td>96</td>
<td>93</td>
<td>0.7</td>
<td>21</td>
</tr>
<tr>
<td>Chlorine Gas, from any source</td>
<td>100</td>
<td>100</td>
<td>0.7</td>
<td>19</td>
</tr>
</tbody>
</table>

Provide Filtration/Circulation

**To manage:** You need to:

**Circulation** Follow the manufacturer’s directions for keeping the circulating pump in good working order and operate it at least six (6) hours a day. Consult your Nature® dealer for optimum run times.

**Filtration** Check the pool’s filter periodically and clean it as recommended by the manufacturer.
<table>
<thead>
<tr>
<th>Problem</th>
<th>What to look for</th>
<th>Treatment</th>
</tr>
</thead>
</table>
| Cloudy water       | Poor filtration                                                                  | 1. Backwash and clean filter.  
                        |                                                                                              | 2. Run filter for 24 hours.    
                        |                                                                                              | 3. Increase run time per day.  |
| Algae growth       | Hazy pool water; may have slightly green appearance.                             | Superchlorinate water with chlorine according to manufacturer's instructions and brush pool walls. |
| Unbalanced water   | 1. High hardness  
                        | 2. High TDS (total dissolved solids)  
                        | 3. High pH  
                        | 4. High total alkalinity | Balance the pool water. |
| Algae              |                                                                                   |                                                                                             |
| Algae may           |                                                                                   |                                                                                             |
| be caused by        |                                                                                   |                                                                                             |
| insufficient levels |                                                                                   |                                                                                             |
| of oxidizer and/or  |                                                                                   |                                                                                             |
| inadequate water    |                                                                                   |                                                                                             |
| circulation.        |                                                                                   |                                                                                             |
| Green algae        | Pea green color; attaches to pool walls; sometimes colors the entire body of water | 1. Check pH and adjust if necessary.  
                        |                                                                                              | 2. Superchlorinate with chlorine according to manufacturer's instructions and brush pool walls.  
                        |                                                                                              | 3. Repeat steps 1 and 2 until algae is gone. |
| Black algae        | Black spots on pool walls                                                          | 1. Brush affected areas.  
                        |                                                                                              | 2. Superchlorinate water with chlorine according to manufacturer's instructions.  
                        |                                                                                              | 3. Add algaeicide.  
                        |                                                                                              | 5. Repeat steps 1 through 4 until algae is gone. |
| Mustard algae      | Yellow or brown film on steps or walls                                            |                                                                                             |
| Note: Regular algae side treatments are recommended for outdoor pools that experience persistent algae problems. Do not use algae treatments containing either copper or sodium bromide. |
| Stains             |                                                                                   |                                                                                             |
| Blue/green         | Copper or iron from pool equipment corrosion or water supply                      | 1. Adjust pH and total alkalinity to ideal ranges.  
                        |                                                                                              | 2. Vigorously brush stained areas.  
                        |                                                                                              | 3. Add sequestrant.  
                        |                                                                                              | 4. Run filter.  
                        |                                                                                              | 5. Twelve hours later, superchlorinate the pool.  
                        |                                                                                              | 6. Test and balance water.  
                        |                                                                                              | 7. Test pool water for dissolved metals. |
| Red/brown          | Iron or manganese from equipment corrosion or water supply.                       |                                                                                             |
| Black              | Manganese in water supply.                                                        |                                                                                             |
| Metal tarnishing   | High native mineral content in water; unbalanced water                            | Clean with soft cloth and mild detergent.  
                        |                                                                                              | Test water for minerals; use a sequestrant; maintain water balance. |
| Scale              | Crusty deposits on pool surfaces                                                  | Adjust pH and total alkalinity to ideal ranges.  
                        |                                                                                              | 1. Replace a volume of pool water with water low in hardness and dissolved solids.  
                        |                                                                                              | 2. Use sequestrant to prevent scale buildup if high hardness levels are a continuing problem. |

**DuoClear® Cartridge Replacement Intervals**

Monitor the cartridge replacement light on the DuoClear control panel to identify the date on which the cartridge should be replaced. Always turn pump off prior to installing or changing a DuoClear cartridge. Your pump/filter is operated under pressure and the pressure must be released before you begin work. Please see your pump/filter owner's manual for further instructions.

A cartridge lasts six (6) months or one (1) season, whichever is shorter. The cartridge should not be used longer than six (6) continuous months.
Winterizing Your Pool

Use these steps as a guide. Consult your dealer for specific information in your area.

Warm Climate
1. Reduce the number of hours the pump runs since the cooler weather decreases the spread of algae and other pollutants.
2. There is no need to superoxidize the pool during cool weather unless the water becomes cloudy (as may occur after a winter storm). See Cloudy Water in Troubleshooting section.

Cold Climate
1. Check total alkalinity and pH of pool to make sure that they are in proper balance.
2. Vacuum the pool bottom to remove any debris or other potential contaminants.
3. Superoxidize the pool with chlorine according to manufacturer’s instructions to clear the water.
4. Add a winter algaecide following manufacturer’s instructions.

Important: Do not use a winter algaecide with copper in it. This will void the DuoClear® no-stain warranty.
5. Backwash the filter.
6. Drain part of the pool water. The amount to drain varies from one (1) part of the country to another. Consult your dealer for advice.
7. Remove the DuoClear cartridge and discard with household trash.
8. Winterize the pipes with pool antifreeze following manufacturer’s instructions.
9. Drain the water out of all equipment (pump, filter, etc.).
10. Store all baskets, hoses and cleaning equipment, indoors if possible.
11. Cover the pool with a winter cover.

Disposal

After six (6) months of use, discard DuoClear cartridge in household trash. Do not save the cartridge for re-use. The cartridge is manufactured with the mineral media sealed inside. In the unlikely event a cartridge breaks, remove it and vacuum out any media introduced into the pool.
Limited Warranty

DUOCLAR™ LIMITED WARRANTY

The limited warranties contained within this document are the only warranties given with your DuoClear Cartridge and supersede any prior warranties. All other warranties, expressed or implied, including the implied warranty of merchantability or the implied warranty of fitness for a particular purpose are hereby disclaimed. Our sole obligation under this warranty, and the purchaser’s sole remedy, is limited to repair or replacement of the DuoClear Cartridge. The DuoClear Cartridge warranty applies to the original owner only.

THE LIMITED WARRANTIES OF THE DUOCLAR CARTRIDGE ARE:

DuoClear Cartridges are warranted to be free of defects in materials and to perform satisfactorily for a period of six months from the date of purchase. DuoClear Cartridges are warranted not to cause copper staining in your pool. This limited warranty requires that you exercise reasonable care of your pool and keep water in balance at all times and not use a copper-based algicide. This limited warranty does not cover discoloration to chromium fittings. This warranty does not cover cartridges used with any biguanide products. If the cartridge is defective and does not perform satisfactorily for the entire six months, we will make a prorated rebate based on your actual period of use. You are responsible to pay the below-indicated percentage on the then applicable retail cost: < 1 month-0%; 1-2 months-25%; 3-4 months-50%; 5-6 months-75%.

EXCLUSIONS FROM WARRANTY

DuoClear Cartridges are designed for use on inground pools from 10,000 to 45,000 gallons, depending on cartridge model. If it is used in any other application, the warranty is void, and the purchaser and/or pool owner releases the manufacturer from any and all claims related to the use of the DuoClear Sanitizer. This warranty does not cover problems arising in whole or in part from purchaser’s negligence, misuse or abuse, improper maintenance or storage, accident, improper installation, improper application, failure to follow all appropriate safety precautions, Acts of God, abnormal weather conditions, damage from plants or animals, and improper use of chemicals.

This warranty specifically excludes all incidental or consequential damages, except where state law requires them to be paid. This warranty gives you specific rights. You may have other rights that vary from state to state.

TO SUBMIT A CLAIM

Report claims to Zodiac Pool Systems, Inc. by calling 1-800-822-7933. Only the original purchaser may submit a claim under this limited warranty. All claims must be accompanied by an original purchase receipt.