DuoClear® Cartridge

Nature2® *Mineral Sanitizers for Pools*

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.

Zodiac Pool Systems, Inc.
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APSP
The Association of Pool & Spa Professionals™

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Assembled in USA from components made in USA and China.
W12236 Rev C

DuoClear® Cartridge

Nature2® *Mineral Sanitizers for Pools*

The Mineral Pool Sanitizer

Controlled Release Technology (CRT) controls the release of silver and copper mineral ions 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.

STATE OF HAWAII
Department of Agriculture
ACCEPTED
LICENSE NO. 8300.9

DuoClear® Cartridge

Nature2® *Mineral Sanitizers for Pools*

FOR INGROUND POOLS

*The Low Chlorine Alternative**

Destroys bacteria with CRT

ACTIVE INGREDIENTS:
Metallic Silver**.....3.51%
Copper sulfate pentahydrate***.....8.23%
INERT INGREDIENTS:.....88.26%
TOTAL:.....100.00%
**From Silver Nitrate
***Copper (Cu) as Metallic..... 2.09%

*The Nature2 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

KEEP OUT OF REACH OF CHILDREN
CAUTION

See back panel for additional precautionary statements.

NET CONTENTS:
ONE CARTRIDGE

EPA Reg. No. 67712-1
EPA Est. No. 67712-CA-001

DuoClear® Cartridge

Nature2® *Mineral Sanitizers for Pools*

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 algaecides or Biguanides.

ZODIAC®

OWNER'S MANUAL

ENGLISH

Nature2®

DuoClear® Cartridge

Features Nature2® Technology†

IMPORTANT: Pool Owner, save this manual.
Builders, leave this manual with the pool owner.

We ask you to take the time to get familiar with this manual. Thank you for purchasing a Zodiac Nature2 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.

CARTRIDGE CAPACITY

DuoClear 25 Cartridge	10,000 - 25,000 gallons	**DuoClear 45 Cartridge**	35,000 - 45,000 gallons
DuoClear 35 Cartridge	25,000 - 35,000 gallons		

SAFETY INSTRUCTIONS - IMPORTANT INFORMATION

Please read prior to installation

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 Nature2 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.

⚠ 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.

EPA Reg. No. 67712-1
EPA Est. No. 67712-CA-001

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.

TL-2501 Rev C

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 Nature^{2}® 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.

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

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:

When:	What to do:
Every day	Run pump and filter at least six (6) hours every day.
Once a week	Balance pH and total alkalinity.
Twice a week	Check chlorine residual; add chlorine to maintain at least a 0.5 ppm range using the chart below.
As needed	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.

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

Type of Chlorine Containing Compound	% Active Ingredient	% Available Chlorine Content	Ounce Quantity Required	Gram Quantity Required
Sodium Hypochlorite Liquid	5.25	5.25	12.7	361
Sodium Hypochlorite Liquid	9.2	9.2	7.3	206
Sodium Hypochlorite Liquid	10	10	6.5	184
Sodium Hypochlorite Liquid	12	12	5.6	158
Calcium Hypochlorite	65	64	1.1	30
Dichloroisocyanurate	99	62	1.1	30
Lithium Hypochlorite	29	35	1.9	54
Trichloro-s-triazintrione	99	90	0.7	21
Chlorine Gas, from any source including chlorine generators	100	100	0.7	19

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 Nature²® dealer for optimum run times.
Filtration	Check the pool's filter periodically and clean it as recommended by the manufacturer.

Troubleshooting Guide

Consult your Nature2® Dealer for additional assistance or call 1-800-822-7933.

	Problem	What to look for	Treatment
Cloudy water Frequently caused by improper start up. See section on Start Up and Install the Cartridge.	Poor filtration	Slow filter turnover rates	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 chorine 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 algaecide. 4 Vacuum pool. 5 Repeat steps 1 through 4 until algae is gone.
	Mustard algae	Yellow or brown film on steps or walls	
	Note: Regular algaecide 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	High pH and high total alkalinity	Adjust pH and total alkalinity to ideal ranges.
		High TDS (total dissolved solids) or high hardness levels	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

DUOCLEAR™ LIMITED WARRANTY

The limited warranties contained within this document are the only warranties given with your DuoClear Cartridge and supercede 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 DUOCLEAR 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 algaecide. 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.

Zodiac Pool Systems, Inc.
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