



## Troubleshooting Guide

This PristineBlue® *Troubleshooting Guide* is intended as an aid for our Authorized PristineBlue® Dealers in assisting their customers with pool and spa problems. If the use of the information in this guide is not effective in treating any specific problem, the dealer or customer can call our technical support line at (800) 257-9283 for further assistance.

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**Earth Science Laboratories, Inc.**

113 SE 22<sup>nd</sup> Street, Suite 1  
 Bentonville, AR 72712  
 (479) 271-7381 (800) 257-9283  
 www.pristineblue.com

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## WATER BALANCE

Properly balanced water is the most essential element in the prevention of pool water problems. Testing total alkalinity, pH and calcium hardness on a regular basis is vital since water balance can be altered by such things as rain, dirt, leaves, bather load and other chemicals. Some problems that occur due to unbalanced water are skin and eye irritation, cloudy or green water, corrosion or scaling of equipment, and ineffective algae and bacteria control. The following parameters will maximize the effectiveness of the PristineBlue® system and also make water conditions more user-friendly. The PristineBlue® system is easier on equipment and provides a difficult environment for algae growth. It is important that the water be balanced according to these parameters before starting PristineBlue®:

- **Total Alkalinity**      **50 to 90 ppm**
- **pH**                      **7.2 to 7.6**
- **Calcium Hardness**    **100 to 300 ppm**

### BALANCING YOUR WATER

**STEP 1**      Make sure the filter is clean and the filtration/circulation system is functioning properly.  
**Note:** If system was converted from a biguanide such as Baquacil®\* or SoftSwim®\*\*, it is absolutely necessary to change the filter media during the conversion process.

\*Baquacil® is a registered trademark of Arch Chemical, Inc. --- \*\* SoftSwim® is a registered trademark of BioLab, Inc.

**STEP 2**      Test total alkalinity. Alkalinity should always be adjusted before pH.  
**High Alkalinity** - Alkalinity over 90 ppm can be lowered using either muriatic acid or dry acid. Dry acid is recommended for spas. With pump off, pour acid directly into water standing in one location away from any inlets. Turn pump back on after application of acid. If alkalinity is extremely high, it is preferable to do several applications of acid to reach the desired level. The recommended application is no more than one quart of acid per 10,000 gallons of water in a 24 hour period. Several applications over several days may be needed to reach the desired range.  
**Low Alkalinity** - Increasing alkalinity is not recommended unless necessary to meet warranty specifications or regain control of pH. Any increase needs to be made before starting PristineBlue®. Use sodium bicarbonate (no more than 8 oz. every 24 hours) to increase alkalinity.

Adjusting  
Alkalinity  
(See pg. 3)

<p><b>CAUTION:</b> Increasing total alkalinity or adding calcium to a pool or spa already on the PristineBlue® non-chlorine pool and spa care system may tie up the biological effectiveness of PristineBlue® and cause green or cloudy water.</p>
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**STEP 3**      Test pH.  
**High pH** - pH above 7.6 can be lowered by broadcasting muriatic acid over the water surface. Use a dry acid for a spa.  
**Note:** Consistently high pH is often a sign of high alkalinity.

Adjusting  
pH  
(See pg. 4)

**Low pH** - pH below 7.2 can be raised with soda ash.

**STEP 4**      Test calcium hardness. Calcium hardness varies little after start up and the introduction of PristineBlue®.

**High Calcium** - Calcium hardness over 300 ppm can be lowered by adding water low in calcium. There are also chemicals available for reducing calcium. PristineCheck® should be used as a part of the regular maintenance program if calcium is over 300 ppm.

Adjusting  
Calcium

**Low Calcium** - Low calcium hardness does not generally cause any problems with the PristineBlue® system and increasing is not recommended.

**Lowering Alkalinity Using Muriatic Acid** (See pg. 2 for application method)

	<b>Gallons of Pool Water</b>						
	<b>1,000</b>	<b>5,000</b>	<b>10,000</b>	<b>15,000</b>	<b>20,000</b>	<b>25,000</b>	<b>50,000</b>
<b>ppm Change Desired</b>	<b>Quantity of Muriatic Acid to Add</b>						
<b>10</b>	2.5 oz.	0.8 pts.	0.8 qts.	1.2 qts.	1.6 qts.	2 qts.	1 gal.
<b>20</b>	5 oz.	1.6 pts.	1.6 qts.	2.4 qts.	3.2 qts.	1 gal.	2 gal.
<b>30</b>	8 oz.	1.2 qts.	2.4 qts.	3.6 qts.	1.2 gal.	1.5 gal.	3 gal.
<b>40</b>	10 oz.	1.6 qts.	3.2 qts.	1.2 gal.	1.6 gal.	2 gal.	4 gal.
<b>50</b>	13 oz.	2 qts.	1 gal.	1.5 gal.	2 gal.	2.5 gal.	5 gal.
<b>60</b>	15 oz.	2.4 qts.	1.2 gal.	1.8 gal.	2.4 gal.	3 gal.	6 gal.
<b>70</b>	1 pt.	2.8 qts.	1.4 gal.	2.1 gal.	2.8 gal.	3.5 gal.	7 gal.
<b>80</b>	1.2 pts.	3.2 qts.	1.6 gal.	2.4 gal.	3.2 gal.	4 gal.	8 gal.
<b>90</b>	1.5 pts.	3.6 qts.	1.8 gal.	2.7 gal.	3.6 gal.	4.5 gal.	9 gal.
<b>100</b>	1.6 pts.	1 gal.	2 gal.	3 gal.	4 gal.	5 gal.	10 gal.

**Lowering Alkalinity Using Sodium Bisulfate (dry acid)**

	<b>Gallons of Pool Water</b>						
	<b>1,000</b>	<b>5,000</b>	<b>10,000</b>	<b>15,000</b>	<b>20,000</b>	<b>25,000</b>	<b>50,000</b>
<b>ppm Change Desired</b>	<b>Pounds of Dry Acid to Add</b>						
<b>10</b>	1/5	1	2	3	4	5	11
<b>20</b>	1/2	2	4	6	9	11	21
<b>30</b>	1	3	6	10	13	16	32
<b>40</b>	1	4	9	13	17	21	43
<b>50</b>	1	5	11	16	21	27	53
<b>60</b>	1	6	13	19	26	32	64
<b>70</b>	1	7	15	22	30	37	74
<b>80</b>	2	9	17	26	34	43	85
<b>90</b>	2	10	19	29	38	48	96
<b>100</b>	2	11	21	32	43	53	106

### Lowering pH Using Muriatic Acid

	Gallons of Pool Water						
	2,500	5,000	10,000	15,000	20,000	25,000	50,000
<b>Decrease Desired</b>	Ounces of Muriatic Acid Required						
<b>7.6 to 7.4</b>	1.5	3	6	9	12	15	30
<b>7.8 to 7.4</b>	2.5	5	10	15	20	25	50
<b>8.0 to 7.4</b>	3	6	12	18	24	30	60
<b>8.2 to 7.4</b>	3.3	6.6	13	20	22.4	33	66
<b>8.4 to 7.4</b>	3.5	7	14	21	28	35	70
<b>8.6 to 7.4</b>	3.7	7.4	15	22	30	37	74
<b>8.8 to 7.4</b>	3.8	7.6	15	23	30.4	38	76
<b>9.0 to 7.4</b>	4	8	15.4	23	30.5	38.5	77
<b>7.8 to 7.6</b>	1	2	4	6	8	10	20
<b>8.0 to 7.6</b>	1.5	3	6	9	12	15	30
<b>8.2 to 7.6</b>	2	4	8	12	16	20	40
<b>8.4 to 7.6</b>	2	4	8.4	12.6	16.8	21	42
<b>8.6 to 7.6</b>	2.2	4.4	8.8	13.2	17.6	22	44
<b>8.8 to 7.6</b>	2.3	4.6	9.2	14	18.4	23	46
<b>9.0 to 7.6</b>	2.4	4.8	9.6	14.4	19.2	24	48
<b>9.2 to 7.6</b>	2.4	4.8	9.6	14.4	19.2	24	48

### Increasing pH Using Soda Ash (sodium carbonate)

	Gallons of Pool Water						
	2,500	5,000	10,000	15,000	20,000	25,000	50,000
<b>Increase Desired</b>	Ounces of Soda Ash Required						
<b>7.0 to 7.4</b>	2	4	8	12	16	20	40
<b>6.6 to 7.4</b>	3	6	12	18	24	30	60

***Helpful hints:***

- Adjusting water balance in the correct order, alkalinity first and then pH, prevents pH bounce.
- The proper chemicals to balance water are sold under many different brand names.

***For the spa:***

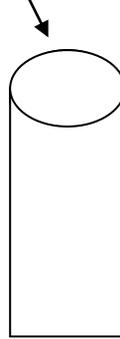
- Turn aeration off when adding chemicals. Use aeration only during spa use.
- After aeration has been off for one hour, test pH and adjust if necessary.
- Let spa water sample cool to room temperature before performing test.

## LOWERING ALKALINITY

We recommend a method called the “Acid Bubble” to lower alkalinity. In this application we are taking a column of water and lowering the alkalinity to 0 (zero). When we start up the circulation after 30 minutes, we are taking a 0 (zero) alkalinity and blending (diluting) this into the higher alkalinity, thus lowering the overall reading.

We explain to the customer that they should first shut off the pump, then go away from the skimmer and inlets, and go to the deepest end of their pool. They will begin to pour the muriatic acid or dry acid (diluted) into an imaginary column. With their arm extended, begin to pour the acid very slowly into the column. Wait 30 minutes and restart the pump.

This column of water will have a zero alkalinity.



Explain to customer:  
6’ wide and 4’ in  
depth they now can  
visualize the column.

When we restart the circulation we are diluting or lowering the alkalinity reading.

We never recommend more than 32 ounces of acid be applied to a 10,000 gallon pool in a 24 hour period. After the 24 hour period, they should retest to get a new reading. We explain that several applications over several days may be needed to reach the desired range. Filtering continuously through this process is something we cannot stress enough. The more circulation (blending) the faster the reading will change.

## CLOUDY WATER

The most common problem and probably the most easily solved is cloudy pool or spa water. While the PristineBlue® non-chlorine pool and spa care system is designed to minimize cloudy water, there are still circumstances that can affect the water clarity. The first step in correcting cloudy water is determining the cause. Most importantly, to prevent cloudy water, follow all instructions carefully. Be sure to provide your customer with our *Pool & Spa Care Guide*.

### Milky (Hazy) Water

Cause	Solution
Water out of balance	Check pH and alkalinity; adjust accordingly. (See Water Balance on pg. 2.)
Inadequate filtration	Increase filtration schedule. Increasing hours of filtration during heavy bather loads, hot weather or inclement weather is recommended. Clean the filter (backwash) as needed. <b>Change the filter media periodically.</b> See your filter instructions.
Dust, dirt, dead algae or dead bacteria	Use PristineClear® at the rate of 2 oz. per 10,000 gallons of water. Filter continuously for 24 hours then backwash the filter or clean the cartridge.
High calcium	Make sure pH is 7.2 to 7.6. If calcium level is over 300 ppm, use PristineCheck® in routine maintenance (pool - 1 oz. per 1,000 gal.; spa - 5 ml per 100 gal.). Filter continuously for 24 hours then backwash the filter or clean the cartridge.
Failure to use PristineCheck® in start-up	Add 2 oz. PristineCheck® per 1,000 gallons. Filter continuously for 24 hours then backwash the filter or clean the cartridge.
PristineBlue® overdose	Do a Dilution Test to determine the exact PristineBlue® level. Mix equal parts of pool water and distilled water. Perform the test with this mixture and multiply the results by 2. If PristineBlue® is above 1.0 ppm, add 2 oz. PristineClean® per 10,000 gallons of water, filter 24 hours and backwash. See pg. 11 for further information.
Insufficient shocking	Shock with PristinePower® (pool - 1 lb. per 10,000 gal.; spa - 5 ml per 100 gal. after each use, not to exceed once per day.)
Phosphates, nitrates or total dissolved solids	Have your customer bring in a water sample for a thorough analysis. Treat according to test the results.

### Green or Yellow Cloudy Water

Cause	Solution
High alkalinity	Lower alkalinity and filter 24 hours.
Rain	After a storm or summer shower, check the pH and adjust if needed.
Phosphates, nitrates or total dissolved solids	Have your customer bring in a water sample for a thorough analysis. Treat according to the test results.
Biguanide residual (Baquacil®* / SoftSwim®** conversions)	Shock the pool nightly with PristineExtra® (1 lb. per 10,000 gallons) filtering continuously until clear. Make sure the filter media was changed during conversion. *Baquacil® is a registered trademark of Arch Chemical, Inc. **SoftSwim® is a registered trademark of BioLab, Inc.

## **PHOSPHATE REMOVAL FOR CLOUDY WATER**

### **Continuously Filter During this Procedure**

Follow directions on the label. Backwash the filter or clean the cartridge after 48 hours. Retest and repeat if necessary.

Natural Chemistry PHOSfree phosphate remover:

Add 1 liter per 10,000 gallons at Phosphate Levels of 0.3 - 0.6 ppm or 300 - 600 ppb

Add 1.5 liters per 10,000 gallons at Phosphate Levels of 0.6 - 1.0 ppm or 600 – 1,000 ppb

## **PHOSPHATE REMOVAL FOR CLOUDY GREEN WATER**

### **5 Day Treatment**

#### **Continuously Filter During this Procedure**

#### **DAY 1:**

Natural Chemistry PHOSfree phosphate remover

Add 1 liter per 10,000 gallons at Phosphate Levels of 0.3 - 0.6 ppm or 300 - 600 ppb

Add 1.5 liters per 10,000 gallons at Phosphate Levels of 0.6 - 1.0 ppm or 600 – 1,000 ppb

#### **DAY 2:**

PristineExtra®

Add 1 lb. per 10,000 gallons

#### **DAY 3:**

Natural Chemistry PHOSfree phosphate remover

Add 1 liter per 10,000 gallons at Phosphate Levels of 0.3 - 0.6 ppm or 300 - 600 ppb

Add 1.5 liters per 10,000 gallons at Phosphate Levels of 0.6 - 1.0 ppm or 600 – 1,000 ppb

#### **DAY 4:**

PristineExtra®

Add 1 lb. per 10,000 gallons

#### **DAY 5:**

Backwash the filter and retest phosphates

Repeat 5 Day Treatment if necessary.

These directions vary somewhat from the manufacturer's recommendations. However, our research indicates that these rates work best with the PristineBlue® system.

## STAINING

The most important element of treating stains is determining whether it is a metal/mineral or organic stain. If there is any doubt, treat as a mineral stain first. *The treatment (chlorine shock) used for organic stains can sometimes set a mineral stain and make it more difficult to remove.* Most stains can be removed instantly while older stains may take several days or more than one stain treatment.

### MINERAL OR ORGANIC?

To determine whether the stain you're dealing with is mineral or organic in nature, perform a "Sock Test":

Place a small amount (1/2 cup to 1 cup) of dry acid (granular pH decriaser) in an old sock and tie to form a small pouch. Place the sock on the stain for three or four minutes, using an extension pole to hold the sock in place if necessary. Remove and discard. If the stain has lightened or changed color where the sock was placed, the stain is mineral in nature and should be treated according to the suggestions below for mineral stain removal.

If there is no change to the stain with the acid sock, make a similar pouch with a second old sock and granular chlorine. Set this sock on the stain for three or four minutes, using an extension pole to hold the sock in place if necessary. Remove and discard. If the stain lightens or changes color, the stain is organic and should be treated according to the suggestions below for organic stain removal.

<b>MINERAL STAIN REMOVAL METHOD</b>	<p>Isolate heater from system when dropping pH below 7.0. Lower pH to 6.8 and alkalinity less than 90. Add 3 oz. PristineClean® per 1,000 gallons of water. Run filter until stain is removed. A second application may be necessary after 72 hours.</p> <p>ALTERNATE METHOD: Adjust pH between 7.2 to 7.6. Add oxalic acid (1 lb. per 10,000 gallons) according to label directions. Run filter continuously during this process. Increase pH after stain has lifted.</p>
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<b>ORGANIC STAIN REMOVAL METHOD</b>	<p>Lower pH to 7.2. Shock with PristineExtra® (2 lb. per 10,000 gallons of water) daily until stain is removed. Run filter continuously and backwash daily. Do not use the pool until the chlorine level tests below 3 ppm.</p>
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## MINERAL STAINS

Cause	Solution
Not using PristineCheck® before starting PristineBlue®	Add 2 oz. of PristineCheck® for every 1,000 gallons of water. Filter continuously 24 hours then backwash.
Failure to backwash after PristineCheck®	Backwash filter and then follow stain removal instructions below.
High pH or alkalinity	Lower pH to 7.2 and alkalinity less than 90. Run filter 24 hours. If stain is not removed after 24 hours, follow stain removal method on page 8.
Failure to use PristineClean® to control metals	Use 2 oz. of PristineClean® for every 10,000 gallons of water every two weeks.
Uncured plaster	Lower pH to 6.8 and alkalinity less than 90. Isolate heater from system when dropping pH below 7.0. Add 3 oz. PristineClean® per 1,000 gallons of water. Run the filter until stain is removed. Operate pool on chlorine for the remainder of the pool season to allow plaster to cure.
High iron content	Do a one time application of PristinePower® (4 lb. per 10,000 gallons). If large amounts of make up water are added, another smaller dose may be necessary.
Inadequate filtration	Increase filtration schedule. Adequate filtration is a key element to stain prevention and water clarity.

## IRON TREATMENT

Iron is a metal found mostly in well water. High iron levels in source water may cause stains and discolored water in swimming pools. We recommend treatment for iron when there is any trace of iron in the water. There are two approaches of treatment for iron. One is if the iron is still in the water, the other is if the iron has fallen out of the water and caused stains.

To minimize the problems caused by high iron levels, keep these tips in mind:

In a chlorine pool use a metal out (sequestering agent).

DO NOT use metal out in a PristineBlue® pool. Never use a chlorine shock as this will set the stain. Instead, use PristinePower® to oxidize the iron out of the water and trap it in the filter.

### **If iron is in the water and no staining has occurred:**

Adjust the pH between 7.2 to 7.4.

- Apply PristinePower® (4 pounds per 10,000 gallons of water) evenly throughout the pool with pump and filter running for at least 8 hours. Water may turn brown or black.
- 24 hours after the application of PristinePower®, vacuum pool to waste and backwash or clean the filter.

**If staining has occurred:**

Adjust the pH to between 6.8 to 7.0 (be sure to bypass the heater).

- Apply PristinePower® (4 pounds per 10,000 gallons of water) evenly throughout the pool with pump and filter running for at least 8 hours. Water may turn brown or black.
- 24 hours after application of PristinePower®, vacuum pool to waste and backwash or clean the filter.
- Add PristineClean® (3 ounces per 1,000 gallons of water) directly to pool water. Do not pour through skimmer. An alternate method is to adjust pH between 7.2 to 7.6 and add oxalic acid (1 pound per 10,000 gallons of water) according to label directions. Run the filter continuously during this process. Increase pH after stain has lifted.
- Test for iron again and repeat if necessary.
- Rebalance water:
 

Total Alkalinity	50 to 90 ppm
pH	7.2 to 7.6

**ORGANIC STAINS**

Cause	Solution
Leaves or other organic matter left in pool for extended period of time	Remove all organic debris as soon as possible and follow with PristineExtra (1 lb. per 10,000 gallons of water) or lithium hypochlorite shock (1 lb. per 10,000 gallons). Filter 24 hours.
Black algae	Shock with PristineExtra® or a lithium hypochlorite and brush daily. Properly maintained PristineBlue® levels will prevent reoccurrence.
Airborne and/or runoff fertilizers in water	Follow stain removal procedure on page 8.
Failure to shock on a regular basis	During peak swim season, it is recommended to shock once weekly. For spas, shock after each use, not to exceed once per day.
Inadequate filtration	Increase filtration schedule. Adequate filtration is a key element to stain prevention and water clarity.
Bleed Through	See Bleed Through section on page 11.

## **BLEED THROUGH**

Bleed Through is the result of fungus growing through a porous vinyl liner caused by moisture under the liner; not from the pool water. This moisture can come from heavy rainfall, a rising water table, use of moist sand in pool construction or a leak in the liner. Because fungus will sometimes appear after a pool has been converted from chlorine to PristineBlue®, it is often mistaken for a mineral stain. It is possible that the fungus was present before converting, but because of the bleaching action of chlorine, it was not visible. Fungus normally begins appearing as a grayish-brown stain on the bottom of a vinyl liner pool, usually in the seam area, and will gradually spread and become darker. It is recommended that the soil be treated with a fungicide before liner installation or replacement. Polyethylene sheeting between the soil and liner is also effective in controlling this problem.

Treatment of the ground with a fungicide (copperas or iron sulfate) around the pool perimeter is also an option. However, if the pool deck is more than 3 feet wide, this method is not recommended. Copperas or iron sulfate is available at most garden centers.

The recommended application rate is 4 pounds per 1,000 square feet. Sprinkle the copperas or iron sulfate on the ground surrounding the pool getting as close to the pool edge as possible. Saturate the treated ground with water on a daily basis for approximately one week. This will be absorbed into the soil under the liner and kill the fungus.

Because the stain is a fungus under the liner and not actually in the pool, the “quick fix” for this problem would be shocking with PristineExtra® at the rate of 2 lb. per 10,000 gallons or it is recommended to maintain a slight chlorine residual by placing a 3-inch trichlor tablet in the skimmer. These will fade the stain but will not kill the fungus behind the liner. Bleed Through often occurs in chlorine pools, but is not noticed because the chlorine bleaches the fungus as it perforates the liner.

## **PristineBlue® OVERDOSE**

PristineBlue® overdose can occur when PristineBlue® is applied more than every two weeks or when the pool or spa volume is miscalculated. This occurs frequently in spas during the start up process. Always treat a spa for fewer gallons than what the spa holds. For example, a 350 gallon spa would be treated as if it were 300 gallons of water. The most common signs of an overdose include cloudy or green tinted water, blue color in the filter, or blue staining on the fixtures.

When using the Mini Test Kit to test your PristineBlue® level, an overdose will appear a very intense blue. This dark blue measures that your PristineBlue® level is high. When this occurs, you need to do a Dilution Test, which is done by mixing equal parts of pool (spa) water and distilled water. Perform your test according to the Mini Test Kit instructions and then multiply the results by 2. For example, if the diluted water tested out at 0.7, multiply the results by 2, which will tell you that your PristineBlue® level is 1.4.

If the PristineBlue® level is 1.0 or above, it is recommended that PristineBlue® not be added for another two weeks. Add 2 oz. of PristineClean® per 10,000 gallons of water, filter 24 hours and backwash. If staining has occurred, refer to the mineral staining section of this Troubleshooting Guide. Do not add any PristineBlue® until the actual PristineBlue® level has dropped below 0.9 ppm.

To prevent an overdose, do not add PristineBlue® more than every two weeks and double check the pool or spa volume.

## COMPATIBILITY

A major advantage of the PristineBlue® non-chlorine pool and spa care system is its compatibility with a variety of surfaces, filters and chemicals. It is important to realize, however, that like all chemicals, PristineBlue® may react with certain products and surfaces and create problems in your pool or spa. Check the outline below BEFORE starting PristineBlue® to determine the compatibility with any products or surfaces involved.

<b>OK</b>	pH and alkalinity decreaseers and filter aids	These products are available in many different brands but are most generally the same chemical make-up and are compatible.
	Chlorine and bromine	These products are compatible and are sometimes used for troubleshooting.
	Vinyl, fiberglass, acrylic, <u>cured</u> plaster and painted surfaces	PristineBlue® will not cause staining on these surfaces as long as the water balance is maintained in the proper range.
	D.E. (diatomaceous earth) filters, cartridge filters and sand filters	Due to the ability of D.E. filters and some cartridge filters to filter very fine particles, it may be necessary to shock these pools with PristinePower® more often than pools with sand filters.
<b>NOT OK</b>	Metal out, stain and scale products, flocculants, some sequestering agents	These products will remove PristineBlue® and leave the pool unprotected against algae and bacteria.
	Algicides	Use of these products is not necessary.
	Biguanides (Baqacil®*/SoftSwim®**)	When converting a pool from these products to PristineBlue®, it is very important to follow the procedure outlined in the <i>Pool &amp; Spa Care Guide</i> very carefully. <small>*Baqacil® is a registered trademark of Arch Chemical, Inc. ** SoftSwim® is a registered trademark of BioLab, Inc.</small>
	New or newly resurfaced gunite, marcite, unpainted plaster or concrete	We discourage the use of PristineBlue® during the first swim season, as there is a slight risk that the pool surface could be chemically stained before it has had time to fully cure. Bleaching agents (chlorine/bromine) are more appropriate during this curing period. In most situations, PristineBlue® can be used after curing for one swim season.
<b>NOT OK</b>	Freezing temperatures	Undiluted PristineBlue® products must be protected from freezing. Once the products are added to the pool water, freezing has no effect.

## SWIMMER'S HAIR

Discoloration of light-colored hair occurs when the hair absorbs oxidized mineral particles in the water. In most cases we've seen, chlorine has been used and there's a heater on the pool (the metal element can slough off particles as water passes over it) or the pool was filled with well water, which is typically rich in minerals. Unfortunately, people with blond or chemically treated hair are susceptible to Swimmer's Hair regardless of what chemicals the pool is treated with.

Swimmer's Hair can occur even in seemingly ideal water conditions. If you have an incident, check the pH of the pool and keep it around 7.2. Be sure you are using PristineClean® every two weeks (2 oz. per 10,000 gallons) to help keep any mineral particles in suspension in the water. If you have been using chlorine to shock the pool, consider switching to a non-chlorine shock.

Encourage fair-haired swimmers to wet their hair with tap water before entering the pool. Like a sponge, wet hair absorbs less than dry hair. Shampooing afterward will help prevent absorption of the agents that contribute to Swimmer's Hair. You might even try a leave-in conditioner to further coat the hair and prevent it from absorbing pool water.

### ***Prevention:***

- Wet hair with tap water before entering the pool or spa, and shampoo and rinse hair after swimming. Use a leave-in conditioner on chemically-treated hair before swimming.
- Maintain pH in the 7.2 to 7.6 range, avoid over-treatment with PristineBlue® and use PristineClean® on a regular basis. Refer to the *Pool & Spa Care Guide* for detailed instructions.
- Use shampoos that are specially formulated for Swimmer's Hair that contain Vitamin C or sodium thiosulfate.

### ***Remedies:***

- Increase PristineClean® to twice the normal amount in the routine maintenance.
- Rinse hair with lemon juice or an aspirin solution (10 aspirin dissolved in 1 quart warm water).
- Use a shampoo that contains the chelating agent EDTA (ethylenediamine tetracetic acid).
- Check with your pool dealer or beauty salon for other commercial products.