



## Five Reasons for Cloudy Water

Cloudy water is a nuisance, it looks uninviting and it can create a safety hazard. There are five causes why pool water gets cloudy. Cloudy water results from one or more of the following:

1. improper water balance
2. low sanitizer or oxidizer level
3. poor or inadequate circulation/filtration
4. extremely high bather load
5. chemical incompatibility

These five causes will cover probably 99 percent of all cloudy water problems you are likely to encounter on a daily basis. There are a few other causes such as a car being driven into the pool, a flock of geese lands in the pool or some deliberate act. But even those might be covered under our broad causes above.

If you correct, check or perform these five causes, you will have crystal clear water - I guarantee it!

1. Balance the water. Adjust all chemical operation parameters to the proper range. High levels of calcium and magnesium hardness, high total alkalinity and high pH can all cause cloudy water. Bringing these readings into the NSPI-recommended ranges may clear up the water. And it's the easiest one of the five to do because these things need to be corrected regularly and the chemicals needed should already be near the pool.

NSPI Recommended Ranges:

Min.	Ideal	Max.	
pH	7.2	7.4-7.6	7.8
Total Alkalinity	60 ppm	80-140 ppm	160 ppm
Calcium Hardness	150 ppm	200-400 ppm	500-1000 ppm

2. Check for proper sanitizer or oxidizer levels. Bacteria and algae can cause the water to look cloudy. Superchlorination or shock treating with a non-chlorine treatment chemical may be required. The chlorine or bromine in the water can combine with contaminants brought in by a rain storm, dust storm or a heavy use period and become less effective. The water can turn hazy, cloudy or dull.

Superchlorinate by adding "enough" chlorine to bring the FAC (free available chlorine) up to 10 ppm or higher and keep it there for at least four hours - the longer the better. All chlorine products that can be used for superchlorination have label directions for using specific types of chlorine products. Follow label directions.

Shock treat the water by adding one of the following non-chlorine shocking chemicals: potassium peroxydisulfate, sodium persulfate, hydrogen peroxide or sodium percarbonate. Follow label directions.

Again, superchlorinating and shock treating chemicals should already be on hand making this the next easiest step.

3. Check your circulation/filtration system. If the filter is not properly sized to the pool or the circulation/filtration system is not operating a sufficient number of hours per day, cloudy water can result. Most circulation/filtration systems must operate a minimum of six hours every day. Check the filter grids in the D.E. (diatomaceous earth) filter. Make sure they are clean, in good condition, not frayed or torn.

On cartridge filters, make sure the cartridges are clean and in good condition, not ripped or torn. Check to see if the cartridges are seated properly and make sure the "O" rings are in place and not cracked. Use a recommended "O" ring

Is the sand in a hi-rate sand filter getting old? Most manufacturers suggest replacing the sand every three to five years. Is the sand clean? Has the system been backwashed? Does the filter have enough sand?

Many manufacturers have products for cleaning filters. They have been tested and usually work better than home remedies or household cleaners. However, if you do decide to do it yourself, use a good detergent first, then use an acid. Using acid first can sometimes react with chemicals on the filter and seal them in place.

The circulation/filtration system should run 24 hours a day when you have a cloudy water problem.

If everything described above appears normal, it's possible that the particles that are making the water look cloudy are too small to be trapped by the filter. In this case, you will need some chemical assistance. There are any number of organic and natural polymers on the market for clarifying water. These products all coagulate and agglomerate small particles so they can be trapped by the filter or fall to the bottom where they can be vacuumed up. Many companies still sell and use alum for this purpose as well.

4. High bather loads. Sometimes the problem is just too much stuff brought in by bathers or swimmers. This is usually suntan oils and lotions, soap, makeup and other personal care products. The best way to stop this from clouding the water is to have bathers and swimmers shower or rinse off before entering the water. If you can not police this and get people to do it, you may have to deal with the problem. Most clarifiers are not real good at removing bather- introduced stuff. However, enzymes can be a great help in these situations. Enzymes work slowly, but they do reduce the soap, oil and grease to carbon dioxide and water.

5. Chemical incompatibility. Sometimes the problem is a chemical incompatibility. This usually happens when a chemical is added to solve a problem and it doesn't work. Then, another chemical is added to solve the same problem. It also happens when chemicals are added too close to one another. Here are some examples.

If you add a scale inhibitor chemical to the water and the same day add a clarifier, you will cloud the water. If you add a scale inhibitor and chlorine on the same day, you cloud the water. If you add soda ash and hardness increaser you cause clouding. Customers often claim that they have not done this and it takes being something of a detective to find it out.

The water may never clear up if two incompatible chemicals are in it. The best thing to do is to drain the water and start over. If a complete draining is out of the question, (vinyl liner pools should never be drained more than half) at least drain 1/4 of the water and refill.

If you have gone through all the above steps and still have cloudy water you should drain 1/2 or all of the water.

There is one other condition in the water that may cause clouding. Copper in the water with biguanide biocides such as Baquacil® and SoftSwim® can cause cloudiness. In these cases, you need to use a biguanide compatible metal sequestering agent.

If you follow all of the above, you will have clean, clear, sparkling water, I guarantee it.