

Why is My Pool Water Cloudy?

By Bob G. Vincent
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What's more enticing than the sight of crystal-clear pool water on a hot summer day? According to a pool industry standard, your pool water should be as clear as your drinking water.¹ In fact, cloudy pool water is a [drowning hazard](#), making water clarity a matter of both aesthetics and safety. Experts at the Centers for Disease Control and Prevention (CDC) recommend bathers ensure the drain at the bottom of the deep end of the pool is visible from the deck before getting in the water (see [CDC infographic](#)). That helps ensure that anyone in trouble in the water can be spotted by a lifeguard or another individual.



Cloudiness: Usually a Physical Problem

According to pool expert Terry Arko,² cloudy pool water is usually a physical problem, not a chemical one. Cloudiness can be caused by particles in the water that enter by settling out of the air (e.g., pollen and dust) or from bathers (e.g., skin, fabric, hair).

¹ Arko, T., January 2018, "Keep it Clear: Challenges and Solutions for Clear Water," *the Edge*, the quarterly publication of the Northeast Spa & Pool Association. Arko notes this standard is 0.5 nephelometric units (NTUs).

² *Ibid.*

To remedy pool water cloudiness, first check the filter. There are three main types of swimming pool filters; the chart at right lists these along with the smallest particle size removed by them, in units of microns. Microns are *millionths* of a meter. To help you visualize a micron, an average human hair has a diameter of about 100 microns.

Filter Type	Smallest Particle Removal (microns)
Sand	20 - 50
Cartridge	15
Diatomaceous Earth (DE)	4-6

Filters are subject to a variety of problems.

Sand filters may become clogged with trapped debris or need additional sand. Sand filters periodically require “backwashing” to remove captured particles.

Backwashing is done by reversing the flow of water through the filter to release entrapped matter outside the pool. Diatomaceous Earth (DE) filters may become dirty or affected by scale, or DE-holding grids may become torn or broken.

Cartridge filters may also become dirty, worn, calcified or scaled. Most cartridge filters can be flushed with a spray hose after either removing them from the canister or while they are set in place in a collection/surge tank. Cleaning cartridges should be done in accordance with manufacturer’s directions.

Arko recommends checking the pool pump for proper flow rate sizing and the pump impellers to ensure they are intact. If the filter is working well and cloudiness persists, he suggests a chemical remedy may be in order.

How to Clear a Cloudy Pool

Cloudy pool water could be the result of a pool party or any large, sudden influx of bathers to the pool. People contribute a wide variety of organic contaminants to the pool, such as perspiration, deodorant, makeup and other cosmetics. Animals may play a role too: Arko states that one dog in the pool is equivalent to 50 people!

Either super chlorination or non-chlorine shock oxidation treatment may be used to break down organic contaminants in the water. Super chlorination not only eliminates wastes but also destroys “combined chlorine.” Combined chlorine refers to a group of compounds of chlorine (from disinfectant) and nitrogen (from swimmers) that forms in pool water and impart a harsh odor often mistakenly attributed by pool patrons to “too much chlorine.” The rule of thumb for super-chlorination is to add ten times the level of combined chlorine measured in the water. Bathers should not be permitted back in the pool until the free chlorine level drops to 1 - 4 ppm.

Next, a Pool Water Clarifier

Lingering cloudy pool water following super chlorination could be due to remnants of organic contaminants too small for the filter to capture, according to Arko. The answer: Add a clarifier. Clarifiers are chain-like molecules with positive charges that attract the mostly negatively charged particles suspended in pool water. Clarifiers

essentially sweep the water clear of these tiny particles and then, because the tiny particles attach to large molecules, both are removed easily in the filter. Arko recommends chitosan clarifiers, which are made from fibers harvested from the shells of crustaceans.

We hope these tips will help you keep your pool clear and refreshing all summer long!

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