

# DPD Testing for Commercial Pools

Maintaining swimming pool & spa water quality through chlorine testing

BY JOE SWEAZY & LARA WINTER

According to a recent Centers for Disease Control and Prevention report, pool and hot tub inspection data from 16 jurisdictions across the U.S. at various aquatic venues indicated 12.3% of inspections resulted in immediate closure due to serious violations. Those violations include free chlorine level (11.9% of inspections), proper pH level (14.9%) and other water chemistry (12.5%).

Regular water testing is critical to ensure an adequate level of sanitizer in the water, and that other parameters are in balance. For years, N-Diethyl-p-Phenylenediamine (DPD) has been preferred over orthotolidine and other methods for detecting chlorine because it detects total chlorine and free chlorine. Furthermore, many public pool regulations require the DPD test method for reporting chlorine levels. Individuals who test the water chemistry in public pools seek fast, easy testing methods.

## Test Strip Method

Test strip technology has advanced to include DPD chemistry and total chlorine for rapid dip-and-read commercial testing. Each test pad has the right amount of reagent on it, eliminating the need to add and count drops. The user dips the test strip and compares it to the provided color chart at the specified time. In less than 90 seconds, results



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DPD testing helps pool and spa professionals keep water safe for swimmers. Using the test strip method, professionals simply dip the strip and compare it to a color chart.

for seven key parameters are complete.

The test strip has extended testing ranges without the need to dilute samples, giving end-users a better perspective on overall pool chemistry with less chance for error. For free chlorine and total chlorine, the range is 0 to 20 ppm, and for bromine the test measures up to 40 ppm.

Recently, emphasis on cyanuric acid/stabilizer has increased. As stabilizer levels exceed 50 ppm, there is increased risk that chlorine will become less efficient in killing bacteria, viruses and protozoa. When stabilized chlorine is being used, the cyanuric acid level increases with use. Test strips

have a cyanuric range of 0 to 300 ppm without the need for dilution.

When chlorine levels reach 30 ppm or more, the strips do not bleach out. If testing is performed using a liquid kit and the user is not aware that chlorine can bleach out at higher levels, there is potential to continue adjusting the chlorine level thinking there is not enough when there is actually too much. A side-by-side comparison of total chlorine and free chlorine enables users to

determine if combined chlorine is present.

## Recording Pool Quality Data

In addition to testing requirements for public pools and spas, there also are requirements to log test results. Some regions require holding up to two years of data for review.

The DPD Pro app calculates water volume, keeps track of up to 200 pools and spas, saves a photo in the test report and stores up to 200 test results per user. Test reports can be emailed or printed, and a saturation index value is calculated when temperature is included.

The testing industry continues to help aquatic professionals and staff conduct millions of tests each year in public pools and spas. Making DPD test strips a part of regular testing protocol can simplify the testing program. **CW**

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**Table 1. Distribution of pH Levels in Commercial & Residential Pools**

	Commercial Pool	Residential Pool	Commercial Spa
Number of samples	86	14	20
% lower than 7.2	14%	14%	10%
% in range 7.2 to 7.8	33%	86%	80%
% greater than 7.8	53%	0%	10%