

Don't Get Sick When Applying Pool Chemicals

Take Extra Care When Adjusting Chlorine Levels Manually

Pool staff, including lifeguards, routinely use chlorine-based products to control pH and chlorine levels of pools for disinfection. These products come in liquid solutions or in dry format (powder, granular, or tablets). State regulations (N.J.A.C. 8:26 – Public Recreational Bathing) require that pool operators add these chemicals through an automated system. However, manual application, adding the chemicals directly into the skimmer or deep end of the pool, is sometimes necessary. Because of their extreme pH properties – very acidic or alkaline – chlorine-based chemicals can cause respiratory irritation, even asthma, in the handler if inhaled.



Using a chlorine-based chemical is considered a type of pesticide application. Therefore, it is important that you receive the proper training beforehand. Follow these simple steps when handling pool chemicals:

- Check the pool chemical levels before making an adjustment. Test the chemical water quality every two hours while the pool is in operation. Use a DPD (diethyl-p-phenylenediamine) or equivalent test kit and a simple (acid demand) test kit or test strips for pH. Follow the instructions that come with the kit. Always use a new test kit each season and check the kit's expiration date.
- Read the label of the disinfectant and the material safety data sheet (MSDS) and always use the recommended personal protective equipment (PPE).
- Handle in a well-ventilated area. If you have a history of respiratory problems, a respirator may be needed during manual additions. Discuss with your supervisor.
- Slowly pour the product into the deep end of the pool (avoid splashing) while the pool pump is on and the water is circulating. Always add chemical to water and never water to the chemical. If you are adding a large quantity of acid, do it in stages. **Be sure there are no swimmers in the water while adding chemicals.**
- Take the same precautions listed above when adding chemicals for "shocking" (raising the disinfectant above normal levels). Shock the pool as needed to rid the water of contaminants that irritate swimmers. Shocking is recommended especially when there is a strong chlorine odor which indicates that the contaminants have absorbed all the "good chlorine."
- If using sodium bisulfate (to lower pH), only add to the pool after it is closed for the day, since it affects chlorine levels.
- Questions? Please contact the Environmental and Occupational Health Surveillance Program at (609) 826-4984.



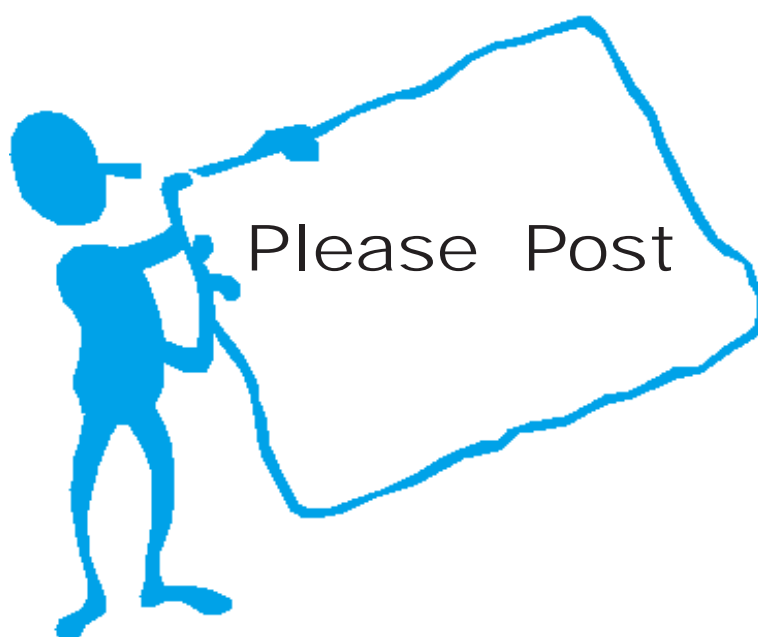
In 2009, a lifeguard in New Jersey manually poured 1/2 cup increments of a chlorine-based disinfectant into a pool to adjust the pH and chlorine levels. Shortly thereafter, she began coughing, wheezing, and experienced chest tightness. The lifeguard was taken to the hospital and diagnosed with asthma. She missed several days of work and has been on asthma medications ever since.

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The New Jersey Department of Health (NJDOH), in conjunction with the National Institute for Occupational Safety and Health (NIOSH), is currently conducting a research study of work-related asthma. This project seeks to identify the factors that contribute to work-related asthma and provides recommendations for controlling workplace exposures associated with work-related asthma. The address for the NJDOH Work-Related Asthma Web site is: <http://www.nj.gov/health/eoh/survweb/wra/index.shtml>.

We hope you find this bulletin informative and that you will share it with others. If you have any comments or questions, or need additional copies of this bulletin, please call the Environmental and Occupational Health Surveillance Program at (609) 826-4984.