



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 18, 2017

Tom Neltner and Maricel Maffini
Natural Resources Defense Council
1152 15th Street NW, Suite 300
Washington, D.C. 20005

Re: NRDC-Observations on Tolerances for Hypochlorite to Minimize
Degeneration to Perchlorate, Correspondence Dated July 31, 2014

Dear Mr. Neltner and Ms. Maffini:

Thank you for your July 31, 2014 correspondence presenting NRDC's "observations on tolerances for hypochlorite to minimize degeneration to perchlorate." The letter requests that, during the registration review for sodium and calcium hypochlorite (Na and Ca hypochlorite), the Environmental Protection Agency (EPA) consider setting tolerances for sodium and calcium hypochlorite to limit perchlorate residues. In addition, NRDC suggests that EPA should use the Na and Ca hypochlorite registration review to determine, pursuant to 21 USC § 346a(a)(3), that perchlorate is a degradation product of hypochlorite and is "likely to pose a potential health risk from dietary exposure in food and water that is of a different type than and of a greater significance than the risk posed by dietary exposure to hypochlorite." NRDC recommends that the agency, in assessing the risk of hypochlorite use in food processing, take into consideration the combined effect of perchlorate, thiocyanate, and nitrate on fetuses and infants and aggregate exposure to perchlorate from all sources including hypochlorite and plastic packaging. The letter additionally suggests that hypochlorite pesticide products should have an expiration date to further minimize perchlorate levels. While the letter falls outside of any currently open registration review comment period for Na and Ca hypochlorite, we will post your comments to the docket¹ along with this response.

EPA agrees with the observation in your letter that research by the American Water Works Association and the Water Research Foundation suggest the potential for perchlorate to form in stored hypochlorite solutions.² As noted in the research, the American Water Works Association

¹ Registration review of Na and Ca hypochlorite; Docket ID # EPA-HQ-OPP-2012-0004 at www.regulations.gov

² Stanford, B.D., A. Pisarenko, S. Snyder, and G. Gordon, Perchlorate, Bromate, and Chlorate in Hypochlorite Solutions: Guidelines for Utilities. Journal - American Water Works Association, 2011. 103(6): p. 71-83. Available at <http://www.awwa.org/publications/journal-awwa/abstract/articleid/28067.aspx>. And: Stanford, B.D., A.N. Pisarenko, S.A. Snyder, and G. Gordon, Minimizing Perchlorate Formation in Hypochlorite Solutions, Opflow, 2009. 35(10): p. 10-13. http://www.waterrf.org/ExecutiveSummaryLibrary/4147_NON_profile.pdf.

and the Water Research Foundation found hypochlorite concentration, pH, ionic strength, and temperature were major factors impacting perchlorate formation in stored hypochlorite solutions at drinking water utilities.³ Additionally, recent monitoring data included in the EPA Office of Water's Unregulated Contaminant Monitoring Rule (UCMR 3) found increased levels of chlorate in finished drinking water.⁴ Therefore, the agency intends, as part of its next steps in the registration review of Na and Ca hypochlorite, to take an in-depth look at the requests in your letter, including whether any action is appropriate under the FFDCa, and to consider, among other things, possible labeling language to optimize storage of hypochlorite products in order to minimize perchlorate and chlorate formation during storage.

As you know, the EPA Office of Water has begun the National Primary Drinking Water Regulation (NPDWR) process for perchlorate. To inform this effort, EPA and Food and Drug Administration scientists developed a Biologically Based Dose Response (also known as a Physiologically-Based Pharmacokinetic (PBPK)) model to inform the agency's SDWA decision making. In light of this, the Office of Pesticide Programs (OPP) will continue to work with the Office of Water on perchlorate issues during registration review for Na and Ca hypochlorite.

Thank you for your interest and input into the registration review of Na and Ca hypochlorite. We continue to welcome any information that you have or become aware of in the future that relates to this issue and the Na and Ca hypochlorite registration review. If you have any questions concerning this response, please contact Rose Kyprianou at (703) 305-5354 or Kyprianou.Rose@epa.gov.

Sincerely,



Steve Knizner
Director
Antimicrobials Division
Office of Pesticide Programs
U.S. Environmental Protection Agency

³ Id.

⁴ USEPA, Six-Year Review 3 Technical Support Document for Chlorate, December 2016, EPA-810-R-16-013. Available at <https://www.epa.gov/sites/production/files/2016-12/documents/810r16013.pdf>.