

April 7, 2011

Office of Pesticide Programs (OPP)
Regulatory Public Docket (7502P)
Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington DC 20460-0001

Re: Petition for a Ban on Triclosan. Docket Number: EPA-HQ-OPP-2010-0548

To Whom It May Concern:

Public Employees for Environmental Responsibility (PEER) is writing to support the petition submitted by Beyond Pesticides and Food & Water Watch (hereinafter “petitioners”) to regulate the pesticide triclosan. PEER is a Washington D.C.-based non-profit, non-partisan public interest organization concerned with honest and open government. Specifically, PEER serves and protects public employees working on environmental issues. PEER represents thousands of local, state and federal government employees nationwide, and we have numerous clients concerned about pharmaceuticals and personal care products (PPCPs) in our drinking water and the environment. Triclosan is one of the PPCPs that is the most prevalent and of great concern to us.

As you are aware, triclosan is ubiquitous in consumer products. There are no natural sources of triclosan, so its discovery in the environment and in animals, including humans, means the contamination is wholly anthropogenic. It is used for its ability to slow or stop the growth of bacteria, fungi, and mildew, and is therefore contained in detergents, dish-washing liquids, soaps, hand creams, acne medication, deodorants, cosmetics, anti-microbial creams, toothpastes, and as an additive in various plastics (e.g., cutting boards, baby toys) and even textiles (e.g., sports wear). Unfortunately, triclosan poses a threat to human health, contaminates water, and persists in the environment. Moreover, efficacy studies show that triclosan is no more efficient than far less toxic alternatives at combating bacteria, fungi, and mildew. Therefore, PEER urges the United States Environmental Protection Agency (“EPA”) to ban the use of triclosan in consumer products.

Triclosan’s effects on ecosystem health. There is a plethora of evidence that triclosan is detrimental to numerous freshwater species. B. Wilson et al., *Short-term dynamics and retention of Triclosan in the lower Hudson River Estuary*, Baseline/Marine Pollution Bulletin, Vol. 56, 1230-1233, 2008. Moreover, scientists have found that triclosan does not degrade within at least

the first few years of deposition in river sediments. Id. In fact, measurable concentrations of triclosan first appear in sediment cores in 1964, which corresponds with the patent issuance for triclosan. M.G. Cantwell et al., *Temporal trends of triclosan contamination in dated sediment cores from four urbanized estuaries: Evidence of preservation and accumulation*, *Chemosphere*, Vol. 78: 347-352, 2010. Traditional wastewater treatment plants (“WWTPs”) do not remove the triclosan from wastewater. Since triclosan is deliberately added into dishwashing liquids, soaps, toothpastes and other personal care products that find their way down the drain, levels entering WWTPs can be high. Researchers in Australia found that WWTPs could leave as much as 28% of triclosan in the wastewater effluent, which ultimately entered into the water column and soils. Kookana, R.S., G.G. Ying and N.J. Waller. *Water Sci. Technol.* 63(4): 598-604, 2011. *Triclosan: its occurrence, fate and effects in the Australian environment*. Triclosan can also disrupt the nitrogen cycle in some soils, and is toxic to algae, fish, and other aquatic organisms. Id.

Triclosan is one of the six most prevalent pharmaceuticals found in wildlife scavengers. C.G. Daughton and I.S. Ruhoy, *Green pharmacy and pharmEcovigilance: prescribing and the planet*, *Expert Review of Clinical Pharmacology*, Vol. 4(2), 211-232, 2011. Plasma collected from wild bottlenose dolphins in South Carolina and Florida resulted in the finding that 31% of the dolphins tested had detectable triclosan levels. P.A. Fair, et al., *Occurrence of triclosan in plasma of wild Atlantic bottlenose dolphins (Tursiops truncatus) and in their environment*, *Environ Pollution*, Vol. 157(8-9): 2248-2254, 2009. The fact that triclosan is so ubiquitous and is bio-accumulating in marine mammals is of grave concern.

Human health risks from triclosan. Given the prevalence of triclosan in our environment, PEER is extremely concerned about the increasing incidence of triclosan-resistant bacteria. Recent studies have confirmed that triclosan-resistant bacteria can be isolated from cattle feedlots, and from residential lawns. T. Tanner and E.T. Gillock, *Triclosan-resistant bacteria isolated from feedlot and residential soils*, *J. Environ. Sci. Health, Part A: Tox. Hazard Subst Environ. Eng.*, Vol. 46(4): 436-440, 2011. In the United States alone, more than 90,000 people die annually from infections that are resistant to antibiotics. The continued use of triclosan, which results in the development of more bacteria resistant to antibiotics, will only exacerbate this problem. Given the widespread use of triclosan, there is a probability that humans of all ages receive life-time exposures to triclosan. J.L. Fang et al., *Occurrence, efficacy, metabolism, and toxicity of triclosan*, *J. Environ Sci Health C Environ Carcinog Ecotoxicol Rev.* Vol. 28(3): 147-71, 2010. In fact, triclosan is being discovered in tissues of many people tested. Id. To make matters worse, there is no effective remediation to remove triclosan from soils and water. W.L. Ela et al., *Toward Identifying the Next Generation of Superfund and Hazardous Waste Site Contaminants*, *Environ Health Perspect.* 119(1): 6–10, 2011. Not only does this promote antibiotic resistant bacteria, but it inhibits the degradation of other pollutants. Id.

Triclosan has also been found to have a positive correlation in humans over the age of 18 with hay fever and allergies. E.M. Rees Clayton et al., *The Impact of Bisphenol A and Triclosan on Immune Parameters in the U.S. Population*, *Environ Health Perspect* 119:390–396, 2011. In other words, higher levels of triclosan are associated with greater odds of having allergies or hay fever, which means that triclosan may negatively affect human immune function. Id.

Even the American Medical Association urges the judicious use of triclosan in consumer products:

Despite their recent proliferation in consumer products, the use of antimicrobial agents such as triclosan in consumer products has not been studied extensively. No data exist to support their efficacy when used in such products or any need for them, but increasing data now suggest growing acquired resistance to these commonly used antimicrobial agents. Studies also suggest that acquired resistance to these antimicrobials in bacteria may also predispose these organisms to resistance against therapeutic antibiotics, but further research is needed.... Considering the available data and the critical nature of the antibiotic resistance problem, it may be prudent to avoid the use of antimicrobial agents in consumer products. Ultimately, antibiotic resistance is a major public health concern that has to be controlled through judicious use of antibiotics by health care practitioners.

Finally, as the petitioners state so eloquently, use of triclosan can lead to the emergence of bacteria resistant to a number of antibiotics:

A number of recent studies have raised serious concerns that triclosan and other similar products may promote the emergence of bacteria resistant to antibiotics. One concern is that bacteria will become resistant to antibacterial products like triclosan, rendering the products useless to those who actually need them, such as people with compromised immune systems. Scientists also worry that because triclosan's mode of action and target site in the bacteria is similar to antibiotics, bacteria that become resistant to triclosan will also become resistant to antibiotics. There are also at least two other proven resistance mechanisms that are similar for both triclosan and antibiotics. Triclosan does not actually cause a mutation in the bacteria, but by killing the normal bacteria, it creates an environment where mutated bacteria that are resistant to triclosan are more likely to survive and reproduce. With so many products on the market containing triclosan, the speed with which resistance develops is likely to be increased. Laboratory studies with triclosan have found a number of different strains of mutated bacteria that are resistant to triclosan. These studies found that these mutant strains of bacteria also showed resistance to certain antibiotics, including a drug widely used for treatment of tuberculosis, an experimental antibiotic currently under development, and a number of other "clinically relevant" antibiotics. While most resistant bacteria grow more slowly than sensitive bacteria, *E. coli* strains that are resistant to triclosan actually have increased growth rates. Constant exposure to triclosan will cause these resistant strains to tolerate it better, become increasingly hardy, and ever more resistant. Because antibiotic resistance has become an increasingly serious problem worldwide, the link to antibacterials may prove to be very important. In a recent review of the subject, one researcher concluded, "It is therefore quite possible that widespread use of triclosan may indeed compound antibiotic resistance" (original citations removed). A. Glaser, *The Ubiquitous Triclosan: A Common Antibacterial Agent Exposed*, <http://www.beyondpesticides.org/pesticides/factsheets/Triclosan%20cited.pdf>.

Given the risks and potential for widespread antibiotic resistance, it is essential that EPA act quickly and decisively in this matter.

Triclosan is no more effective as an anti-bacterial agent than other, less dangerous alternatives. Triclosan is marketed in consumer products as a method of killing bacteria, and therefore making people safer from bacterial infections. However, a recent study investigating the efficacy of triclosan impregnated cutting boards found that there was no difference in bacteria counts on triclosan impregnated cutting boards and regular cutting boards after exposure to contaminated chicken for an hour. T. Møretrø et al, *Assessment of the antibacterial activity of a triclosan-containing cutting board*, Internat'l J. Food Microbiol., Vol. 146(2): 157-162, 2011. While the triclosan-impregnated boards had some effect on certain bacteria under low humidity conditions after 72 hours (Id.), this is not relevant to real-life conditions. Finally, the researchers found that the triclosan migrated out of the boards after washings, reducing any possible antibacterial effect over time. Id. Therefore, use of triclosan in consumer products such as cutting boards may actually serve to make the public complacent about cleaning, and result in even more bacterial infections. *Use of Antimicrobials in Consumer Products* (CSA Rep. 2, A-00), Summaries and Recommendations of Council on Scientific Affairs Reports, AMA Annual Meeting, p. 4, 2000.

Moreover, triclosan has been found to be no more effective than soap and water for hand washing. A. E. Aiello, E.L. Larson, and S.B. Levy, *Consumer Antibacterial Soaps: Effective or Just Risky?* Clinical Infectious Diseases, Vol. 45(2): S137-S147, 2007. Specifically, a study into the efficacy of triclosan-containing products compared to plain soap and water found:

Soaps containing triclosan within the range of concentrations commonly used in the community setting (0.1%–0.45% wt/vol) were no more effective than plain soap at preventing infectious illness symptoms and reducing bacterial levels on the hands. Several laboratory studies demonstrated evidence of triclosan-adapted cross-resistance to antibiotics among different species of bacteria.

Given that effective, less environmentally damaging alternatives to triclosan are readily available, it is non-sensical to continue allowing triclosan in consumer products.

Legal authority. PEER respectfully requests that EPA cancel and suspend the registration of all pesticides containing triclosan pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Specifically, PEER believes that EPA should issue a notice of cancellation of the registrations of all products containing triclosan pursuant to 7 U.S.C. 136d(b)(1) and (2), and also issue an emergency order pursuant to 7 U.S.C. 136d(c)(3) to immediately suspend those registrations.

Because studies show that triclosan presents a serious threat to human health and the environment, and that triclosan is present in and accumulating in waters of the United States, PEER requests that EPA immediately begin regulating the presence of triclosan under the Clean Water Act (CWA). Specifically, EPA's Administrator should use her authority to impose technology-based limitations, health-based pollutant water quality pretreatment requirements, and biosolids regulation. In addition, PEER requests that the Administrator conduct a complete

evaluation of the appropriateness of regulating triclosan under the Safe Drinking Water Act (SDWA), given its potential human health impacts.

Finally, given that triclosan is prevalent in not only the environment but many non-human species, we request that EPA comply with the Endangered Species Act (ESA) particularly the consultation and biological assessment requirements of the ESA.

Conclusion. EPA has a responsibility under the law to protect public health and the environment. Therefore, PEER urges the EPA to grant the petitioners' request and immediately ban the use of triclosan, and use its other legal authorities listed above to regulate triclosan and limit its entrance into the environment and our drinking water supply. Since triclosan is no more effective than regular soap and water at reducing bacteria, it is not necessary for triclosan to be incorporated into consumer products, particularly given the evident hazards to people and the environment.

Thank you for consideration of these comments.

Sincerely,

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Field Director