



Perspective on Assertions Regarding Triclosan Safety and Benefits

Understanding the Facts: Triclosan Use

Assertion: *Triclosan is an antibacterial agent unnecessarily used in a variety of consumer products.*

Facts: Over-The-Counter (OTC) antibacterial wash products with triclosan provide a key public health benefit by reducing or eliminating pathogenic bacteria on the skin to a significantly greater degree than plain soap and water. Antibacterial ingredients used in OTC products are regulated for safety and efficacy by the U.S. Food and Drug Administration (FDA). Triclosan is regulated by the FDA or the U.S. Environmental Protection Agency (EPA), depending upon the intended product use and associated claims.

It has been scientifically demonstrated that there is a much greater potential to reduce the acquisition and transmission of disease resulting from the handling of food through the use of an antibacterial hand wash compared to plain soap.ⁱ

When consumers use products with antibacterial ingredients, including triclosan, they receive an extra measure of protection when handling food, changing diapers, or caring for a sick family member. Triclosan kills bacteria that cause disease such as skin infections and intestinal illnesses.

Triclosan is used extensively in health care settings, such as hospitals, nursing homes, and doctors' offices to reduce the acquisition and transfer of transient bacteria, which is a major factor in the spread of disease.

Understanding the Facts: Measurement of Dioxin in the Environment

Assertion: *As triclosan moves through the wastewater treatment process and into the river, the exposure to sunlight and chlorine causes it to transform into dangerous dioxins and other carcinogens.*

Facts: The University of Minnesota study detected dioxins at very low levels. The U of MN study authors did not investigate whether these levels have any impact on human or environmental health.

Dioxin congeners formed from triclosan are not of toxicological concern. There are 210 different congeners of dioxins and only 17 are considered of toxicological concern. None of the congeners of dioxin formed from triclosan are of toxicological concern to mammals, birds or fish.ⁱⁱ

California and U.S. EPA have concluded that the di- and tri- chlorinated dibenzo-p-dioxins (CDDs) found in Minnesota lake sediments are essentially non-toxic to humans when compared to the toxic compounds within this class of substances.^{iii,iv}

The di- and tri-chlorinated dibenzo-p-dioxins found in MN sediments by the U of MN study have extraordinarily low toxicity and, as a result, are not the focus of human health regulatory initiatives in CA, MN or at the federal level.^v

Understanding the Facts: Bacterial Resistance Concerns

Assertion: *The Minnesota Department of Health recommends against using antibacterial products in most home applications because they may contribute to the emergence of resistant strains of bacteria.*

Facts: While certain, controlled laboratory studies have led to speculation about a link between antimicrobial products and bacterial resistance; there is simply no clinical, real-world evidence of increased resistance.

A 2011 scientific paper in the *International Journal of Microbiology Research*, as well as other publications, affirms that the use of antibacterial hand wash products in the home setting does not contribute to antibiotic resistance.^{vi}

In the most recent review by a government authority specific to triclosan, the European Commission's Scientific Committee on Consumer Safety indicated in their 2010 report on triclosan and antimicrobial resistance that to date there are no epidemiological data linking outbreaks of antimicrobial resistant human and zoonotic pathogens to exposure to triclosan.^{vii}

Understanding the Facts: Benefits of Triclosan

Assertion: *Triclosan-containing products provide no benefit.*

Facts: Minnesota legislation, S.F. 1166, provides exemptions including medical uses. When consumers use products with antibacterial ingredients, including triclosan, they receive an extra measure of protection when handling food, changing diapers, or caring for a sick family member. If triclosan is safe to use in a medical establishment; why stop consumers from using it in their homes?

Antibacterial products can kill or inhibit the growth of bacteria that cause skin infections and intestinal illnesses. The FDA has found no basis for consumers to stop using products containing triclosan. Similarly, EPA oversees and allows its use in pesticide products based on its safety and efficacy.

Thousands of products contain recognized and beneficial antibacterial properties and the broad language of S.F. 1166 could very likely ban many common household cleaners that also provide disinfection regulated by EPA.

The Executive Order (11-13, April 2011) does not ban triclosan. The E.O. is an agency sustainability directive.

Understanding the Facts: Impact on Human Health

Assertion: *Studies indicate that triclosan exposure can lead to allergy susceptibility in humans, and present risks for fetal health development in pregnant women.*

Facts: The U.S. FDA considers the full range of potential effects in its assessment of the safety of antibacterial ingredients as they are used in drugs, cosmetics, medical devices and other products regulated by the FDA, and has found no reason to alter its regulation of these products.

The U.S. Centers for Disease Control reports: "Finding measurable amounts of triclosan in urine does not mean that the levels of triclosan cause an adverse health effect."^{viii}

Antibacterial ingredients have been assessed and approved as safe and effective by regulatory bodies in the U.S. and around the world like the European Union and Australia.^{ix} It has not been banned in Japan or Canada.^x

The U.S. Geological Survey (USGS) detected triclosan in samples collected from Minnesota wastewater and surface water at concentrations ranging from 0.088 to 4.3 parts per billion (ppb).^{xi}

Minnesota Department of Health (MDH) has developed a health-based guidance value of 50 ppb for triclosan in drinking water.^{xii} However, MDH has not found triclosan in any Minnesota drinking waters.

The U.S. EPA considered all the potential effects that triclosan could have and authorized its use in pesticide products in the "Reregistration Eligibility Decision (RED) for Triclosan."^{xiii}

Scientific studies on endocrine disruption, threats to thyroid and other organ function since completion of the RED are consistent with EPA conclusions.^{xiv}

ⁱ Fischler GE, et al. 2007. Effect of hand wash agents on controlling the transmission of pathogenic bacteria from hands to food. *J. Food Protect.* 70:2873–2877.

ⁱⁱ U.S. EPA, Triclosan Registration Review and Preliminary Work Plan, Case #2340, March 2013.

ⁱⁱⁱ Office of Environmental Health and Hazard Assessment (OEHA) [California], CHRONIC TOXICITY SUMMARY, Chlorinated Dibenz-P-Dioxins and Chlorinated Dibenzofurans; http://oehha.ca.gov/air/chronic_rels/pdf/chlordibenz.pdf

^{iv} https://www.revisor.mn.gov/rules/?id=7052.0230&keyword_type=all&keyword=CHLORINATED-DIBENZO-P-DIOXINS

^v U.S. EPA. 1989. Interim procedures for estimating risks associated with exposures to mixtures of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs and CDFs) and 1989 update. Washington, DC: Risk Assessment Forum. <http://www.epa.gov/raf/publications/interim-procedures-cdds-cdfs.htm>

^{vi} "Investigation of Antibiotic and Antibacterial Susceptibility and Resistance in Staphylococcus from the Skin of Users and Non-Users of Antibacterial Wash Products in Home Environments," E.C. Cole, R.M. Addison, P.D. Dulaney, K.E. Leese, H.M. Madanat, and A.M. Guffey *International Journal of Microbiology Research* | Vol. 3, Issue 2, 2011, pp-90-96; "Whither triclosan?", A.D. Russell | *Journal of Antimicrobial Chemotherapy* 2004; "Comparative analysis of antibiotic and antimicrobial biocide susceptibility data...", RJW Lambert | *Journal of Applied Microbiology* 2004; "Exposure of sink drain microcosms to triclosan: population dynamics and antimicrobial susceptibility", Andrew J. McBain, Robert G. Bartolo, Carl E. Catrenich, Duane Charbonneau, Ruth G. Ledder, Bradford B. Price, and Peter Gilbert | *Applied and Environmental Microbiology*, September 2003.

^{vii} "Opinion on triclosan (antimicrobial resistance)", European Commission Scientific Committee on Consumer Safety | *June SCCP/1251/09 (2010)*.

^{viii} http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

^{ix} European Parliament and Council of the European Union. 2009. Regulation (Ec) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 on cosmetic products. *Official Journal of the European Union*, L 342:59-209 (http://www.salute.gov.it/imgs/C_17_pagineAree_1409_listaFile_itemName_15_file.pdf).

^x Preliminary Assessment: Triclosan, Health Canada/Environment Canada, March 2012, http://www.ec.gc.ca/ese-ees/6EF68BEC-5620-4435-8729-9B91C57A9FD2/Triclosan_EN.pdf

^{xi} USGS (2004). Presence and Distribution of Organic Wastewater Compounds in Wastewater, Surface, Ground, and Drinking Waters, Minnesota, 2000-02. Scientific Investigation Report 2004-5138. <http://pubs.usgs.gov/sir/2004/5138/20045138.pdf>

^{xii} <http://www.health.state.mn.us/divs/eh/risk/guidance/dwec/triclosaninfo.pdf>

^{xiii} <http://www.epa.gov/oppsrt11/REDs/2340red.pdf>

^{xiv} Paul KB, Hedge JM, DeVito MJ, Crofton KM. 2010. Short-term exposure to Triclosan decreases thyroxine in vivo via upregulation of hepatic catabolism in young Long-Evans rats. *Tox Sci* 113(2):367–379.