

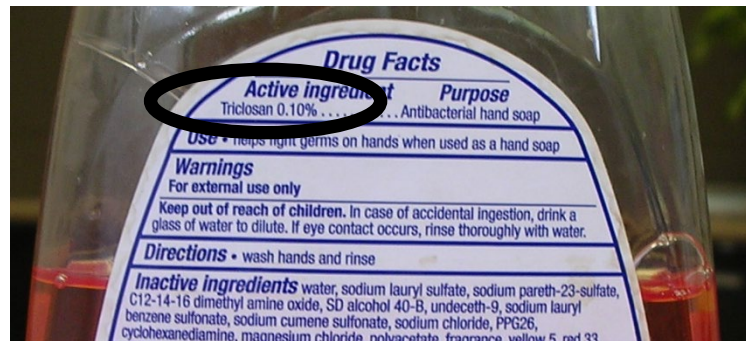


STEPHANIE HUGHES, ChE P.E.  
Consulting Engineer / University Lecturer

# MEMORANDUM

**To:** BACWA Pesticides Committee / BAPPG Steering Committee  
**Date:** April 8, 2020  
**Subject:** Triclosan and Other Antimicrobials: Rationale for Suspending Outreach

This memo briefly summarizes the history of triclosan outreach efforts by BAPPG and member agencies as well as the rationale for suspending outreach specific to triclosan, and instead continuing to be vigilant regarding the broader topic of antibacterials and antimicrobials, particularly quaternary ammonium compounds (quats).



Historically, triclosan has been in the following products:

- Hand soap
- Dish-washing products
- Laundry detergents and softeners
- Plastics (e.g., toys, cutting boards)
- Toothpaste
- Deodorants and antiperspirants
- Cosmetics
- Hair conditioners
- Impregnated sponges
- Pesticides (as an inert ingredient)

In 2006, the Emerging Contaminant Workgroup of the Santa Clara Basin Watershed Management Initiative (SCBWMI) published a white paper on triclosan (included as a referenced attachment). Beginning in 2009, BAPPG included triclosan as part of an outreach program to dental assistant students throughout the Bay Area. When BAPPG later rolled out a pharmaceutical disposal outreach program to hospice agencies, this topic was also included. Member agencies also conducted consumer outreach and regulated internal agency purchasing.<sup>1</sup> In 2011, the RMP selected triclosan to be the first in a series of fact sheets on emerging contaminants and the effect of such contaminants on San Francisco Bay.

An SFEI study analyzed triclosan and methyl triclosan (the primary metabolite) in small fish in Bay waters near a wastewater outfall to evaluate bioaccumulation and potential impacts to aquatic organisms. "Triclosan and methyl triclosan in fish tissue were related to degrees of wastewater influence at the sampling locations, and calculations suggested bioaccumulation from diet in addition to direct uptake from water."<sup>2</sup>

In 2015, BAPPG, with the support of O'Rorke, prepared a flyer with information for residents on the harmful

<sup>1</sup> Example from Palo Alto, Oct 2015: <https://www.cityofpaloalto.org/civicax/filebank/documents/49161>

<sup>2</sup> Conference abstract, undated: D. Lin, San Francisco Estuary Institute, R. Sutton, San Francisco Estuary Institute, C. Hamilton, SGS AXYSJ. Hobbs, UC Davis, *Triclosan and methyl triclosan in small fish in estuary waters influenced by wastewater effluent*. (Final paper not yet published)

impacts of triclosan (see Appendix). In Spring 2015, BAPPG funded Facebook online ads to educate residents about the negative impacts of triclosan.<sup>3</sup> In Spring 2016, O’Rorke developed and ran Facebook and Pandora online ads to educate residents about the negative impacts of triclosan.<sup>4</sup>

In 2016, the FDA banned triclosan and 18 other antibacterials from hand and body washes, effective September 2017, because the ingredients “are not generally recognized as safe and effective (GRAS/GRAE) and are misbranded.” In their announcement, the FDA further clarified that this ban was only for consumer antiseptic wash products:<sup>5</sup>

*“...consumer antiseptic wash drug products addressed by this rulemaking include a variety of personal care products intended to be used with water, such as antibacterial soaps, hand washes, and body washes, which may be used by consumers for personal use in the home and in certain public settings on a frequent, even daily, basis.”*

At the end of 2017, the FDA announced a second ban that incorporated 24 active ingredients (including triclosan) in antiseptic washes used by health care professionals; this second ban went into effect in late 2018.<sup>6</sup>

Although those bans did not include a wide variety of uses (e.g., toothpaste, clothing, kitchenware, furniture, and toys), further outreach specific to triclosan may not be necessary because some brands are no longer using triclosan in their products. Colgate, the only brand of toothpaste with triclosan, rebranded their product in January 2019, removing triclosan from their product line.<sup>7</sup> Johnson & Johnson is using the FDA ban as part of a “we care” statement to say that triclosan is not in any of their products.<sup>8</sup>

It is difficult to assess the availability of triclosan products online because information on purchasing sites appears outdated. For instance, several dental product websites suggested that MedicaScrub still contains triclosan, as does the corporate web page for the manufacturer, First Medica.<sup>9</sup> However, a phone call to First

**Antiseptic active ingredients addressed in 2016 FDA review of consumer hand and body washes:**

- Cloflucarban
- Fluorosalan
- Hexachlorophene
- Hexylresorcinol
- Iodophors (Iodine-containing ingredients)
  - Iodine complex (ammonium ether sulfate and polyoxyethylene sorbitan monolaurate)
  - Iodine complex (phosphate ester of alkylaryloxy polyethylene glycol)
  - Nonylphenoxypoly (ethyleneoxy) ethanoliiodine
  - Poloxamer—iodine complex
  - Povidone-iodine 5 to 10 percent
  - Undecoylium chloride iodine complex
- Methylbenzethonium chloride
- Phenol (greater than 1.5 percent)
- Phenol (less than 1.5 percent)
- Secondary amyltricsresols
- Sodium oxychlorosene
- Tribromsalan
- Triclocarban
- Triclosan
- Triple dye

<sup>3</sup> The ads generated 514,118 impressions and 7,372 clicks (1.4% CTR (click through rate)).

<sup>4</sup> The Facebook online ads ran for one month, generating 913,925 impressions and 1,617 clicks (0.17% CTR). The Pandora ads ran for 2 weeks generating 484,480 impressions and 623 clicks (0.26% CTR).

<sup>5</sup> <https://www.federalregister.gov/documents/2016/09/06/2016-21337/safety-and-effectiveness-of-consumer-antiseptics-topical-antimicrobial-drug-products-for>

<sup>6</sup> <https://msc.ul.com/en/resources/article/u.s.-fda-bans-use-of-triclosan-in-health-care-antiseptics/>

<sup>7</sup> <https://www.bloomberg.com/news/articles/2019-01-15/colgate-total-toothpaste-to-relaunch-this-time-sans-triclosan>

<sup>8</sup> <https://www.safetyandcarecommitment.com/Ingredients>

<sup>9</sup> <http://www.firstmedica.com/soaps-lotion/>

Medica indicates that triclosan was removed from MedicaScrub following the FDA ban on health care related products.<sup>10</sup>

One of the trade names of triclosan is Microban additive B.<sup>11</sup> Microban's website indicates that it no longer manufactures triclosan, with their website stating: "Microban's new antimicrobial chemistries are Triclosan-free, arsenic-free and fully compliant with EU Biocidal Products Regulations (BPR)."<sup>12</sup> A brief look at the EU's BPR shows that four separate triclosan products — each with a unique application — sought approval through the EU's Biocidal Products Regulation. None of the applications were approved.<sup>13</sup>

Based on surveys at local markets, triclosan appears to have been replaced by other antibacterials, such as benzalkonium chloride (e.g., SoftSoap) and chloroxylenol (e.g., Dawn Ultra dishwashing liquid). In the 2016 ban, the FDA deferred action on benzalkonium chloride, benzethonium chloride, and chloroxylenol "to allow more time for interested parties to complete the studies necessary to fill the safety and efficacy data gaps."<sup>14</sup> Benzalkonium chloride is a member of the family of quaternary ammonium compounds (or quats) which are used in a number of pharmaceutical formulations, cosmetics, commercial disinfectants, industrial sanitizers and food preservatives. Use appears to have expanded following the ban of triclosan and other antimicrobials. Furthermore, benzalkonium chloride:<sup>15</sup>

- is the most frequently found quats worldwide in municipal wastewater at concentrations ranging between 20 and 300 mg/L,
- is very highly toxic to aquatic invertebrates,
- may cause POTW treatment process interference, and
- appears widely in aquatic sediments.

This brief review of triclosan availability in consumer products suggests that triclosan may not be a concern with respect to uses that would lead to down-the-drain discharges. However, BAPPG may want to remain vigilant regarding antimicrobial active ingredients, given the expanded use of quats, and keep an eye on next actions from both EPA and FDA. Finally, member agencies might want to consider monitoring influent and effluent for benzalkonium chloride.

---

<sup>10</sup> Phone communication from S. Hughes to FirstMedica, January 30, 2020.

<sup>11</sup> For a list of synonyms and trade names for triclosan, see <https://www.chembk.com/en/chem/Microban%20Additive%20B>

<sup>12</sup> <https://www.microban.com/news/new-microban-antimicrobial-and-anti-odour-technological-breakthrough-for-appliance-gaskets>

<sup>13</sup> <https://echa.europa.eu/information-on-chemicals/biocidal-active-substances>

<sup>14</sup> <https://www.federalregister.gov/documents/2016/09/06/2016-21337/safety-and-effectiveness-of-consumer-antiseptics-topical-antimicrobial-drug-products-for>

<sup>15</sup> Email from Dr. Kelly Moran, TDC Environmental, January 30, 2020.

# Anti-bacterial soaps and cleaners are more harmful than healthy. Check the label for triclosan — a registered pesticide.



## ALWAYS READ THE LABEL

To avoid exposing your family and the environment to harmful chemicals such as triclosan, chloroxylenol, tetrasodium and EDTA, always read the label on household products before you purchase!

Use alternative products:

- Vegetable-based, glycerin or castile soaps
- Less toxic or natural products without dyes or synthetic ingredients
- Hand-sanitizing gels with a minimum of 60% alcohol or peroxide



## TRICLOSAN FACTS

- Triclosan is a registered pesticide and is commonly used in antibacterial household products such as hand soap, toothpaste, all purpose cleaners and detergents.
- Studies have found that using just regular non-antibacterial soap and warm water is just as effective as using antibacterial soaps.
- Overuse of triclosan contributes to bacterial resistance to antibiotics. Triclosan has been found in human breast milk, urine and blood.
- Triclosan passes through the sewer system and into the Bay because our wastewater treatment systems are not built to remove triclosan and other antibacterial chemicals.
- Triclosan has been found in the San Francisco Bay and is toxic to marine life.

For more information on pollution prevention programs visit [Baywise.org](http://Baywise.org)

