UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comments of Safer Chemicals Healthy Families on Persistent, Bioaccumulative, and Toxic (PBT) Chemicals Subject to Regulation under Section 6(h) of the Toxic Substances Control Act

Submitted via Regulations.gov (January 12, 2018)

Decabromodiphenyl ethers (DecaBDE): EPA-HQ-OPPT-2016-0724

Hexachlorobutadiene (HCBD): EPA-HQ-OPPT-2016-0738

Pentachlorothiophenol (PCTP): EPA-HQ-OPPT-2016-0739

Phenol, isopropylated, phosphate (3:1): EPA-HQ-OPPT-2016-0730

2,4,6-Tris(tert-butyl) phenol: EPA-HQ-OPPT-2016-0734

Safer Chemicals Healthy Families (SCHF), Alaska Community Action on Toxics, Center for Environmental Health, Earthjustice, Environmental Health Strategy Center, Natural Resources Defense Council, and Toxic-Free Future submit these comments on the five Persistent, Bioaccumulative, and Toxic (PBT) chemicals identified by the Environmental Protection Agency (EPA) for regulation under section 6(h) of the recently amended Toxic Substances Control Act (TSCA).

The signatory organizations are national and grassroots groups committed to assuring the safety of chemicals used in our homes, workplaces and the many products to which our families and children are exposed each day. They took a leadership role during the TSCA legislative process, advocating the most protective and effective legislation possible to reduce the risks of toxic chemicals in use today.

These comments focus on the broad goals and requirements of TSCA section 6(h). Additional comments by our groups and related organizations provide specific use and exposure information on the five PBTs that will enhance EPA's understanding of their presence in products, workplaces and the environment.

Section 6(h) is one of several improvements in health and environmental protection from chemical risks that Congress made in TSCA through the 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act (LCSA). This provision reflects the long-standing recognition by EPA and international bodies of the special dangers that PBTs pose to people and ecosystems as a result of their long-term presence, wide distribution and accumulation in living organisms and the natural environment. To address these dangers, section 6(h) creates a fast-track process for stringently restricting manufacture, use and disposal of chemicals previously determined by EPA to possess PBT properties. These restrictions must reduce exposure to the extent practicable, thereby preventing further build-up of the PBTs in the environment and biota and the harmful consequences that result. Reflecting this sense of urgency, rules imposing these restrictions must be proposed no later than June of 2019 and finalized 18 months thereafter.

We strongly urge EPA to interpret and implement section 6(h) in a manner that achieves the goals of section 6(h). Congress framed its requirements so that EPA could act expeditiously, based on the presumption that chemicals determined to be PBTs are harmful to the health and the environment and must be restricted without further risk evaluation or analysis of costs and benefits. As discussed below, in implementing section 6(h), EPA should not create unnecessary roadblocks but should focus on the overriding Congressional objective of achieving the maximum possible reduction in human exposure and environmental release. This objective compels EPA, subject only to constraints on feasibility, to impose requirements under section 6(a)(1) that eliminate manufacturing, processing, distribution in commerce and disposal of the five PBTs. In addition, use and unsafe disposal of legacy PBT-containing products should be prohibited under sections 6(a)(5) and (6), and manufacturers and processors should be required to repurchase or replace these products under section 6(a)(7).

EPA Has on Numerous Occasions Highlighted the Serious and Unique Threats Posed by PBTs to Human Health and the Environment

In its 1989 PBT strategy, EPA noted that:[1]

> "EPA has a long history of successful programs in controlling PBT pollutants -- pollutants that are toxic, persist in the environment, and bioaccumulate in food chains, and thus pose risks to human health and ecosystems. The challenges remaining on PBT pollutants stem from the fact that they transfer rather easily among air, water, and land, and span boundaries of programs, geography, and generations, making single-statute approaches less than the full solution to reducing these risks. To achieve further reductions, a multi-media approach is necessary."
>
> "PBTs are associated with a range of adverse human health effects, including effects on the nervous system, reproductive and developmental problems, cancer, and genetic impacts. People who eat large amounts of fish from local waters contaminated with certain PBTs are at risk for adverse effects. The developing fetus and young child are at particular risk for developmental problems. Birds and mammals at the top of the food chain are also at risk. The most famous example is the serious decline of the bald eagle in the 1960's because the fish they ate contained DDT."

In its presentation at the September 7, 2017 Webinar on section 6(h),[2] EPA further underscored that:

> "EPA believes that, as a general matter, the release to the environment of toxic chemicals that persist and bioaccumulate **is of greater concern than the release of toxic chemicals that do not persist or bioaccumulate.**
>
> Since PBT chemicals can remain in the environment for a significant amount of time and can bioaccumulate in animal tissues, even relatively small releases of such chemicals from individual facilities have the potential to accumulate over time to higher levels and cause significant adverse impacts on human health and the environment."

[1] https://archive.epa.gov/p2/archive/web/pdf/pbtstrat.pdf
[2] https://www.epa.gov/sites/production/files/2017-09/documents/pbt_public_webinar_-_9-5-17.pdf (emphasis in original).

As EPA has recognized, the special characteristics of PBTs dictate a comprehensive, multi-media strategy to reduce exposure and release – and thus potential accumulation in biological systems and the environment – to the lowest levels possible. This is the goal of section 6(h).

EPA Has Already Established that the Five Substances Meet the TSCA Criteria for Persistence and Bioaccumulation

6(h) builds on and incorporates previous EPA efforts to identify PBTs under TSCA. Under section 6(h)(1), chemicals subject to restriction are those that (1) are identified in the 2014 update of the TSCA Work Plan for Chemical Assessments and scored high for both persistence and bioaccumulation, or high for one and either high or moderate for another, based on EPA's 2012 Work Plan methodology; (2) do not fall within statutory exclusions for metals and certain previous regulatory actions; and (3) were not the subject of timely industry requests for risk evaluations as described in section 6(h)(5).

As EPA has explained,[3] the five chemicals that EPA has targeted for restriction under section 6(h) reflect a careful application of these criteria, including scoring of their persistence and bioaccumulation properties using the 2012 Workplan methodology. Thus, EPA's determination that they are PBTs requiring restriction under section 6(h) is not in doubt.

EPA Should not Replace the Workplan PBT Criteria with a New PBT Identification Framework as Proposed by the Chemical Industry

In comments recently submitted to the PBT docket, the American Chemistry Council ("ACC") has advocated replacing the Workplan criteria with a new "framework" for identifying PBTs and recommended reexamining the PBT properties of the 5 chemicals based on this framework.[4] This suggestion should be rejected for many reasons.

For EPA to alter its criteria for what constitutes a PBT chemical would require an extensive public process with considerable input from the scientific community and have implications far beyond TSCA. The Workplan PBT criteria are linked to other EPA programs such as the TSCA new chemical review process,[5] and are consistent with well-established international efforts to restrict PBTs such as the Stockholm Convention on Persistent Organic Pollutants.[6] Describing provisions that form the basis for section 6(h), the House Report on the TSCA legislation states that "[t]he Committee hopes the Administrator will rely on its TSCA Work Plan Chemicals Methods Document published in February 2012 in identifying PBT candidate substances for listing."[7] To now jettison the Congressionally-approved and internationally-accepted Workplan criteria would be not only irresponsible but a reckless reversal of EPA's determination nearly a year ago that the five PBTs are subject to section 6(h) because they meet these criteria.

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[3] https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act-0#pbt; See Q&As 39-44

[4] https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0724-0006

[5] Federal Register, Vol. 64, No 213. Nov 4, 1999. EPA: Category for Persistent, Bioaccumulative, and Toxic New Chemical Substances.

[6] Stockholm Convention on Persistent Organic Pollutants, Annex D. Information Requirements and Screening Criteria. Available at: http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-COP-CONVTEXT-D.En.pdf

[7] H.R Report 114–176, 114 Cong, 1st Sess, June 23, 2015, at 27.

Finally, even if it made sense for EPA to alter its criteria for what constitutes a PBT, the "framework" proposed by the ACC would not be an acceptable replacement for the TSCA Work Plan Chemicals Method Document. The 2008 Society of Environmental Toxicology and Chemistry (SETAC) Pellston Workshop is not incorporated in a peer-reviewed publication. The version that is peer-reviewed is 4 pages long and very general: It does NOT propose actual criteria for P, B or T. Moreover, the Workshop was industry funded and 6 out of 9 of the workgroups were chaired by industry participants. It strains credulity to suggest that a non-peer-reviewed document published ten years ago in 2008, sponsored by industry, is a "consensus" on the "current science" of PBTs.

Restriction of the Five PBTs under Section 6(h) Does Not Require a Determination of Risk but Simply Calls for Findings of Toxicity and Likely Exposure

Section 6(h)(2) is explicit that EPA is not "required to conduct risk evaluations" on PBTs identified under section 6(h)(1). This evidences Congress' recognition that the examination of risk that TSCA requires as a condition for restricting other chemicals is inapplicable to PBTs because of the uniquely serious threats that their inherent properties pose to health and the environment.

In lieu of a risk determination, section 6(h) requires two simple findings that EPA has already made for each of the five chemicals.

First, under section 6(h)(1)(A), EPA must have a "reasonable basis to conclude" that a chemical meeting the criteria for persistence and bioaccumulation is also "toxic." To meet this requirement, EPA must simply identify data or another basis to conclude that the chemical can cause one or more acute or chronic adverse effects in people or animal species.[8]

Using the criteria and methodology in its 2012 Work Plan Methods Document, EPA screened all the chemicals under review for "hazard" based on human health and environmental toxicity concerns and assigned each chemical a score reflecting the type and level of toxicity reported in the literature. Chemicals selected for inclusion in the final 2014 Work Plan list necessarily received "high" or "moderate" hazard scores based on this screening process. Thus, EPA has already concluded that the five PBTs under consideration for restriction under section 6(h) are "toxic." No additional analysis is necessary to satisfy this element of section 6(h).

Under section 6(h)(1)(B), EPA must also determine that the general population, a potentially exposed or susceptible population, or the environment is "likely" to be exposed to the chemical under the conditions of use. This determination must be made on the basis of a "use and exposure assessment." Again, however, the analysis EPA conducts need not be extensive or comprehensive, in contrast to the assessment of exposure that TSCA requires for risk evaluations conducted under section 6(b). Since EPA must only show that the occurrence of exposure is "likely," it is not required to characterize the nature, magnitude and duration of exposure in any detail or even to document actual exposure. It is sufficient to show that people are likely to be exposed to the PBT or that it is likely to be present in the environment based on the nature of the PBT's manufacture, processing and use.

Under the Work Plan Methods Document, the five PBTs have already been screened and scored for "exposure" and this should constitute an adequate "use and exposure assessment" under section

[8] The severity of these effects, the exposure levels at which they occur and their underlying biological mechanism should be irrelevant because these considerations relate to "risk" rather than "toxicity."

6(h)(1)(B).[9] Moreover, EPA has supplemented the screening conducted under the Work Plan process by developing "use documents" on the five PBTs that summarize available information on the manufacturing (including importing), processing, distribution in commerce, use, and disposal of each chemical. These descriptions of the chemicals' conditions of use provide further evidence of "likely" exposure and similarly satisfy the requirement of a "use and exposure assessment" under section 6(h)(1)(B).

Although EPA has already met its obligation to show likely exposure to the five PBTs, we encourage EPA to augment its use documents with any additional information submitted by interested parties. A comprehensive understanding of current use and exposure will help ensure that restrictions imposed by the Agency under section 6(h)(4) target all known or foreseeable pathways of exposure and eliminate them to the extent practicable. This will in turn ensure that EPA's rules are effective in preventing long-term buildup of the PBTs in the environment and food chain and in preventing the resulting harm to people and biota.

Restrictions on PBTs under Section 6(h) Must Achieve the Greatest Feasible Reduction in Exposure and Environmental Release

Restrictions on PBTs identified in accordance with section 6(h)(1) must comply with section 6(h)(4). Under this provision, EPA must select restrictions on covered PBTs from the list of allowable requirements in section 6(a). However, in all other respects, the risk management provisions of sections 6 do not apply. Thus, EPA need not make a determination of "unreasonable risk," need not conduct an analysis of costs, benefits and other economic consequences of its rule, and is not required to consider the availability of alternatives to the PBT.

Instead, section 6(h)(4) provides that the selection of restrictions must be based on only two factors. First, EPA must "address the risks of injury to health or the environment that [it] determines are presented by the" PBT. Second and in addition, EPA must impose requirements that "reduce exposure to [the PBT] to the extent practicable."[10]

Addressing all Risks of Injury. The first requirement means that, in placing restrictions on the PBT, EPA must consider and seek to reduce all risks that are attributable to the PBT as a result of its adverse effects on health or the environment from near-term exposure and release and/or its potential for long-term buildup and accumulation in biological systems or the biosphere. A formal risk assessment should not be necessary to satisfy this requirement. But EPA should have a sufficient understanding of the PBT's pathways of exposure and release and associated risks of harm so it can show that the requirements it imposes are likely to provide meaningful long-term protection against known or suspected adverse effects to people, animals and plant species.

[9] Q&A 43 of its general TSCA Q&As confirms that: "In identifying these chemicals in the Work Plan, EPA considered the uses and potential for exposures."

[10] While earlier drafts of the legislation used the phrase "to the maximum extent practicable," the legislative history indicates that this phrase was considered synonymous with the phrase "to the extent practicable" included in the enacted legislation. Thus, the deletion of "maximum" did not change EPA's obligations. Congressional Record – Senate 3517 (June 7, 2016).

Reducing Exposure. The second requirement, which is independent of the first, should ensure that the selected restriction achieves the largest possible reduction in exposure by humans, plant and animal species, and environmental media (air, water and waste) that is "practicable."

According to the Merriam-Webster dictionary, the term "practicable" means "capable of being put into practice or of being done or accomplished." The dictionary lists as synonyms achievable, attainable, doable, feasible, possible, realizable, viable, and workable. Statutes and regulations using the term "to the extent practicable" have generally been interpreted to require all actions within the limits of available technology and other physical and practical constraints.[11] Costs and other economic considerations have generally been excluded from determinations of "practicability" unless they are so great as to make the desired goal impossible to achieve.

These considerations should govern the restrictions that EPA selects from the list of allowable requirements in section 6(a) to reduce PBT exposure. Since exposure must be reduced to the extent "practicable," EPA must opt for those measures that result in the highest degree of exposure reduction which is technically and economically achievable, without regard to cost-benefit or cost-effectiveness factors. In most cases, the greatest exposure reduction will be obtained from a "requirement prohibiting . . . the manufacturing, processing, or distribution in commerce" of the PBT under section 6(a)(1)(A). Thus, EPA should impose such a prohibition unless the cessation of manufacturing, processing and distribution is not feasible.[12] Since disposal is an additional source of exposure, EPA should also impose a "requirement prohibiting . . . any manner or method of disposal" of the PBT, again subject to limits on feasibility, under section 6(a)(6)(A).[13]

Finally, even if manufacture and processing for a particular use have been discontinued, where "legacy products" containing the PBT remain in use and are a source of ongoing human exposure and release to the environment, EPA must take action to reduce such exposure and release to the extent practicable.[14] Thus, barring feasibility constraints, EPA should invoke section 6(a)(7), under which manufacturers and processors must provide notice of the PBT to exposed persons and the general public and replace or repurchase products containing the PBT. EPA must also take action under section 6(a)(6) to reduce exposure to these "legacy" substances during future disposal and/or recycling.

We appreciate the opportunity to provide our views on section 6(h) of TSCA and look forward to continuing to work with EPA. Please contact SCHF counsel, Bob Sussman, with any questions at bobsussman1@comcast.net.

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[11] The maximum extent practicable standard "imposes a clear duty on the agency to fulfill the statutory command to the extent that it is feasible or possible." (Defenders of Wildlife v. Babbitt, 130 F. Supp. 2d 121, 131 (D.D.C. 2001); Friends of Boundary Waters Wilderness v. Thomas, 53 F.3d 881, 885 (8th Cir. 1995) ("feasible" means "physically possible").)

[12] This prohibition should cover not just current manufacturing and processing but the resumption of previously discontinued activities in order to prevent future sources of exposure and release.

[13] Thus, EPA could allow a particular use to continue if there is no available substitute but not if available substitutes are more expensive or provide inferior performance. These considerations would be relevant only in establishing use exemptions from section 6(a) restrictions under section 6(g).

[14] The requirement to reduce exposure under section 6(h)(4) is not limited to a PBT's "conditions of use" but applies to the substance broadly. EPA has argued (erroneously in our view) that it need not conduct risk evaluations on non-PBTs for "legacy uses" outside the definition of "conditions of use." But whatever the merits of EPA's position may be, it has no application under section 6(h)(4), which doesn't contain this term.

Respectfully submitted,

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Pentachlorothiophenol

CASRN: 133-49-3

Technical Report for EPA Docket No. EPA-HQ-OPPT-2016-0739
On production, imports, use, recycling, and other exposure scenarios

Healthy Building Network
In Collaboration with
Safer Chemicals Healthy Families, Earthjustice, Natural Resources Defense Council,
and the Environmental Health Strategy Center
January 12, 2018

Contents

BODY OF REPORT

1. **Identifying Information**

CASRN: 133-49-3
Synonyms: PCTP; Pentachlorobenzenethiol; Benzenethiol, 2,3,4,5,6-pentachloro-
TSCA Docket: EPA-HQ-OPPT-2016-0739

This report also considers the zinc salt of pentachlorothiophenol (CASRN 117-97-5), which is 89.6% PCTP.

2. Research Methods

In collaboration with Safer Chemicals Healthy Families and the Environmental Health Strategy Center, the Healthy Building Network (HBN) research team reviewed Chemical Data Reporting (CDR) submissions for pentachlorothiophenol (PCTP), as published on the EPA ChemView database, and EPA's Preliminary Information on Manufacturing, Processing, Distribution, Use,

and Disposal (published in August 2017[1]). HBN cross-referenced this information with a variety of national, European and United Nations reports, chemical industry literature, and a shipping database (Panjiva) with the goal of identifying potentially missing producers, importers, uses and other potential sources of exposure to pentachlorothiophenol.

Findings that are not included in the EPA Preliminary Information document, or are not named in CDR forms, are highlighted in yellow.

3. Production/Trade

The sole manufacturer of pentachlorothiophenol in the United States (Struktol) no longer offers it. While production in the United States may have ceased, pentachlorothiophenol continues to be exported from Asia to the U.S. The weight of shipments to one company in the U.S. may have exceeded the threshold that requires companies to submit Chemical Data Reporting forms, but these do not appear on CDR forms available on the ChemView database.

a. Domestic Producer

Struktol Company of America (Summit, Ohio)

According to its 2012 CDR form, Struktol reported manufacturing the chemical in Summit, Ohio in 2011 and 2010.[2] As EPA's Preliminary Information document notes, Struktol did not submit manufacturing information in 2016, and it is unclear whether it continues to produce pentachlorothiophenol. Struktol A95, which contains 45% pentachlorothiophenol and was listed in the company's 2004 *Rubber Handbook*, is no longer offered on the company's online catalog of rubber peptisers.[3] A search of the Panjiva trade database identified no exports of Struktol A95 in the past three years.[4]

Facilities manufacturing hazardous chemicals can release them into adjacent neighborhoods, by air, through dust, and in water. According to a summary report run from EPA's EJSCREEN database, an estimated 3,917 people live within a mile radius of the Struktol plant. According to EJSCREEN, minorities comprise 18% of the population, and 34% of the population is low income. For comparison, the U.S. average minority population is 38% and the average low income population is 34%. (See appendix to this submission for further EJSCREEN data.)

b. Imports

Although domestic production may have ceased, PCTP is shipped from China to the United States. There are no CDR submissions for these shipments. (Struktol's is the only CDR form posted by EPA.)

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[1] Available in Docket EPA-HQ-OPPT-2016-0739

[2] EPA Chemview: https://chemview.epa.gov/chemview?tf=0&ch=133-49-3&su=2-5-6-7&as=3-10-9-8&ac=1-15-16-6378999&ma=4-11-1981377&tds=0&tdl=10&tas1=1&tas2=asc&tas3=undefined&tss=&modal=template&modalId=6658045&modalSrc=4&modalDetailId=&modalCdr=6658045

[3] http://www.struktol.net/markets-products/rubber-additives/peptisers.html

[4] Panjiva database

Hangzhou Tangjie Molecules Chemtrade Co. Ltd. (China) → Pacific Genuity (Palo Alto, Calif.)

In the last three years, Hangzhou Tangjie Molecules Chemtrade (杭州汤捷姆化工贸易有限公司 in Chinese; also known as Hangzhou TJM Chemical Co. or simply TJM Chemical) brokered at least 13 shipments of "zinc pentachlorothiophenol" from China to Pacific Genuity of Palo Alto. According to records in the Panjiva trade database, there were four such shipments in 2017 (totalling 47,000 kilograms in full), five shipments in 2016 (56,400 kg), and four in 2015 (47,000 kg). Ports of entry were scattered across the country. Entry points included Baltimore, Md. (arrived on Aug. 10, 2015), Boston, Mass. (Feb. 29, March 3, and June 14, 2017), Charleston, S.C. (May 2, 2016), Cleveland, Ohio (May 19, 2015), Detroit Metropolitan Airport, Mich. (Dec. 23, 2015 and Jan. 2, 2016), New York, N.Y. (Jan. 14, 2015), Norfolk, Va. (July 21, 2016), Raleigh-Durham, N.C. (Sept. 22 and Oct. 7, 2016) and Richmond, Va. (Aug. 23, 2017).

Pentachlorothiophenol comprises 89.6% of the mass of zinc pentachlorothiophenol. Therefore the shipments in 2015, weighing 47,000 kg in full, contained 42,112 kg PCTP, well above the reporting requirement threshold of 11,340 kg (25,000 lbs.).

These are the only shipments recorded in the Panjiva shipping database under the names Hangzhou Tangjie Molecules Chemtrade, Hangzhou TJM, or TJM Chemical. The chemical trader mainly serves the pharmaceutical, pesticides and electronics industries, according to its website.[5]

Pacific Genuity, the importer, also is a chemical trading firm based in China. Its Palo Alto address is a branch office. Pacific Genuity's website offers zinc pentachlorothiophenol, along with other specialty chemicals, pharmaceuticals and nutritional supplements.[6] It does not provide any suggestions on appropriate use of the chemical.

In 2007, Pacific Genuity CEO Minghua Lu signed a consent agreement with EPA Region IX for violating the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The company imported 100 drums of pesticides from China without proper labels; these drums were "misbranded" in violation of FIFRA. Pacific Genuity paid a $4,000 penalty as part of the settlement.[7]

Tanaka Ai (Shanghai) Co., Ltd. (China) → Bridgestone Golf Inc. (USA)

Bridgestone Golf routinely imports "zinc salt of penta chloro thiophenol" from Shanghai, China, via Tanaka Ai, a trading company based in Japan. Shipments between these companies totaled

[5] http://www.tjmchem.com/cgi/search-en.cgi?f=introduction_en_1_+company_en_1_&t=introduction_en_1_
[6] http://www.pacificgenuity.com/product02.htm and http://pacificgenuity.com/product.html
[7] https://yosemite.epa.gov/OA/RHC/EPAAdmin.nsf/Filings/EA67B334C438831C8525764E006E3892/$File/FIFRA-09-2007-0003.pdf

940 kilograms in 2015, 2,820 kg in 2016, and 6,110 kg in 2017.[8] These amounts do not trigger CDR reporting requirements.

4. Use

In addition to the uses described in EPA's Preliminary Information, literature contemplates using rubber, modified by pentachlorothiophenol, in the production of nylon fiber.[9]

5. Other release and exposure scenarios

Production and use of this chemical appears to be concentrated in China and India, where companies continue to broker it primarily to rubber manufacturers, including golf ball manufacturers. China and Taiwan, combined, shipped over 2.8 billion golf balls to the United States in the last decade (see Chart below).

The Rubber Manufacturer Association informed EPA that, "RMA members do not currently use HCBD or PCTP to manufacture tires produced in the U.S. or imported into the U.S."[10]

While Bridgestone may not use PCTP to produce tires, it continues to import it to manufacture golf balls in the United States, as revealed by Panjiva trade data (above).

Bridgestone golf ball patents routinely describe adding pentachlorothiophenol, or zinc salts of pentachlorothiophenol, to rubber layers.[11] Other golf ball patents, such as one granted to Nike in 2013, continue to describe PCTP as a "typical" peptizing agent. According to the Nike patent:

> "**Typically, the halogenated thiophenol peptizing agent is pentachlorothiophenol,** which is commercially available in salt or neat form, or under the tradename STRUKTOL®, a clay-based carrier containing, in one form, pentachlorothiophenol (PCTP) loaded at 45 percent. STRUKTOL® is commercially available from Struktol Company of America of Ohio. PCTP is commercially available in neat form and in the zinc salt form from eChinachem of California, US."[12] (emphasis added)

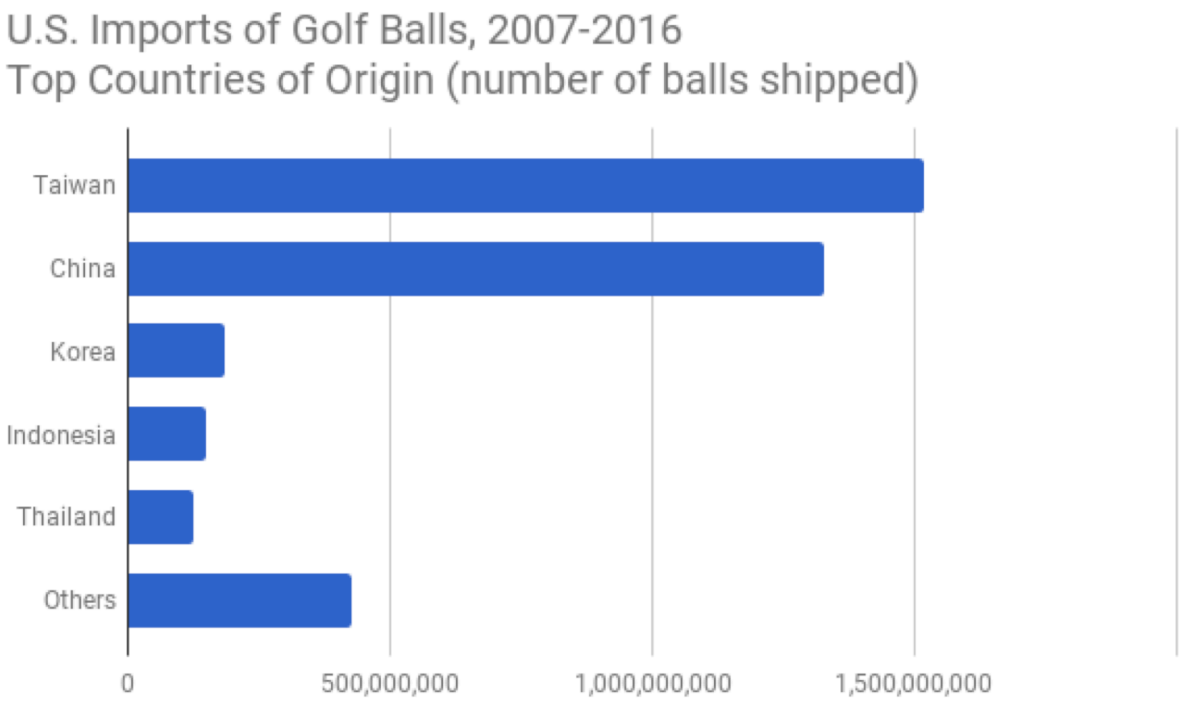
According to Steve Mona, CEO of the World Golf Foundation, "golf is enjoyed by 24 million Americans who play 465 million rounds annually at the nation's 15,200 facilities."[13] Golfers surveyed in 2009 admitted to losing an average of 1.3 balls per round played.[14] Therefore, over

[8] Panjiva trade database (subscription required).
[9] http://onlinelibrary.wiley.com/doi/10.1002/app.39750/abstract
[10] Comment submitted by Sarah E. Amick, Vice President EHS&S and Senior Counsel, Rubber Manufacturers Association (RMA), Feb. 22, 2017, for Pentachlorothiophenol; TSCA Review, Docket No. EPA-HQ-OPPT-2016-0739. https://www.regulations.gov/docket?D=EPA-HQ-OPPT-2016-0739
[11] As noted in EPA's Preliminary Information, "PCTP is mentioned over 2,100 patents including patents held by the the following companies for the manufacture of golf balls that may include PCTP: Callaway Golf Co., Acushnet Co., Taylor Made Golf Co., [and] Bridgestone Sports Co. Ltd."
[12] https://www.google.com/patents/WO2013126476A1
[13] https://www.forbes.com/sites/darrenheitner/2016/05/08/the-state-of-the-golf-industry-in-2016/#7a7428e933a6
[14] http://www.golf.com/special-features/2009-survey-american-golfer

600 million golf balls are lost each year at U.S. golf courses. People often find them, but frequently, wayward golf balls are lost forever in soft earth, deep forests, the bottoms of lakes and chasms, and other unreachable locations. Each lost ball becomes a potential point source for pentachlorothiophenol pollution.

Once lost, golf balls may take centuries to degrade. As Bill Pennington wrote in *The New York Times* (May 2, 2010), "There has been no recognized study of what has happened or will happen to the millions, if not billions, of lost golf balls dotting the earth in little white, orange and pink orbs. There is no accepted wisdom on how long it takes a golf ball to decompose in soil or waterways, according to interviews with more than a dozen golf industry and environmental researchers. The informed guess is that most balls begin to break down somewhere between 50 and 500 years. Whether the great multitude of lost golf balls rotting under logs or slowly dissolving at the bottom of swampy estuaries pose an environmental hazard is also apparently undetermined."

Almost eight years after Pennington's article, there have still been no published studies on the release of toxic substances - including PCTP - from the degradation of golf balls.



HEALTHY BUILDING NETWORK CHART. Based on data from U.S. International Trade Commission Dataweb.

APPENDIX – EJSCREEN Report attached

EJSCREEN Report (Version 2017)

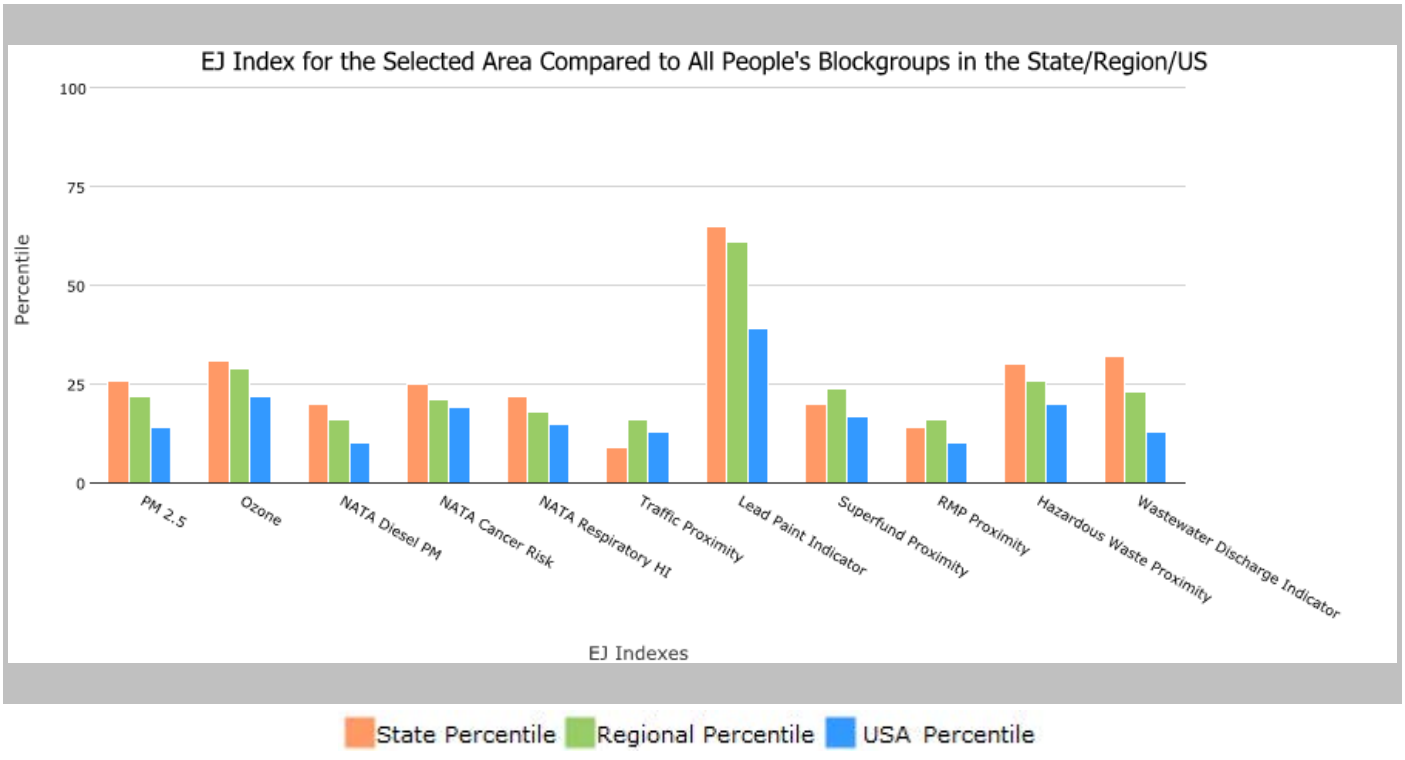
1 mile Ring Centered at 41.181000,-81.500600, OHIO, EPA Region 5

Approximate Population: 3,917

Input Area (sq. miles): 3.14

Struktol Company of America - Summit, Ohio

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	26	22	14
EJ Index for Ozone	31	29	22
EJ Index for NATA* Diesel PM	20	16	10
EJ Index for NATA* Air Toxics Cancer Risk	25	21	19
EJ Index for NATA* Respiratory Hazard Index	22	18	15
EJ Index for Traffic Proximity and Volume	9	16	13
EJ Index for Lead Paint Indicator	65	61	39
EJ Index for Superfund Proximity	20	24	17
EJ Index for RMP Proximity	14	16	10
EJ Index for Hazardous Waste Proximity	30	26	20
EJ Index for Wastewater Discharge Indicator	32	23	13



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

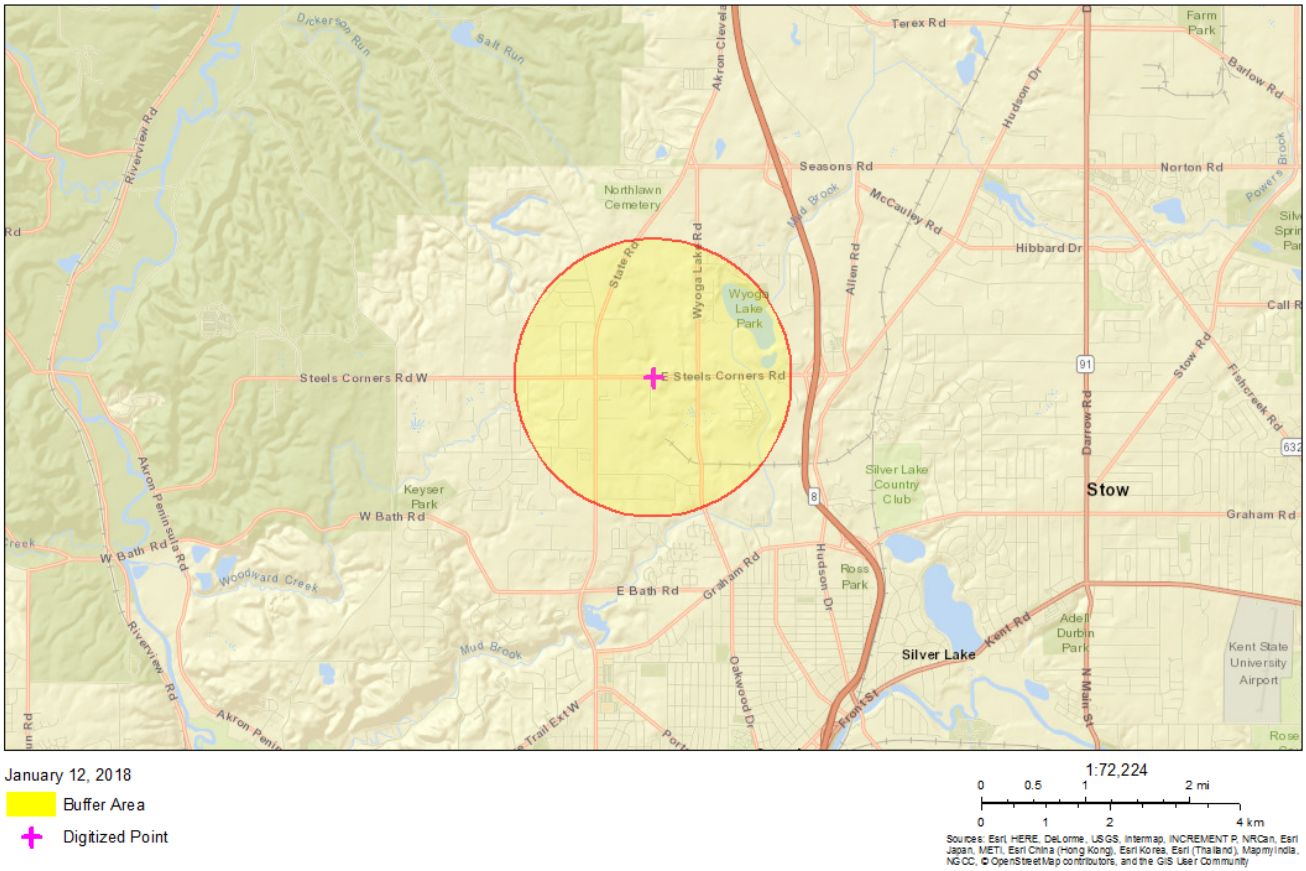
EJSCREEN Report (Version 2017)

1 mile Ring Centered at 41.181000,-81.500600, OHIO, EPA Region 5

Approximate Population: 3,917

Input Area (sq. miles): 3.14

Struktol Company of America - Summit, Ohio



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2017)

1 mile Ring Centered at 41.181000,-81.500600, OHIO, EPA Region 5

Approximate Population: 3,917

Input Area (sq. miles): 3.14

Struktol Company of America - Summit, Ohio

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	10.7	10.7	50	10.1	67	9.14	85
Ozone (ppb)	33.8	37.6	2	37.6	1	38.4	6
NATA* Diesel PM (µg/m^3)	0.932	0.997	50	0.932	50-60th	0.938	60-70th
NATA* Cancer Risk (lifetime risk per million)	34	37	41	34	50-60th	40	<50th
NATA* Respiratory Hazard Index	1.7	1.8	48	1.7	60-70th	1.8	50-60th
Traffic Proximity and Volume (daily traffic count/distance to road)	110	170	69	370	57	590	53
Lead Paint Indicator (% Pre-1960 Housing)	0.067	0.42	13	0.39	16	0.29	30
Superfund Proximity (site count/km distance)	0.072	0.095	65	0.13	59	0.13	55
RMP Proximity (facility count/km distance)	0.75	0.7	70	0.81	65	0.73	70
Hazardous Waste Proximity (facility count/km distance)	0.051	0.097	49	0.091	51	0.093	49
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0046	17	59	4.2	67	30	76
Demographic Indicators							
Demographic Index	26%	27%	62	29%	60	36%	43
Minority Population	18%	20%	66	25%	58	38%	37
Low Income Population	34%	34%	55	33%	58	34%	54
Linguistically Isolated Population	2%	1%	79	2%	71	5%	56
Population With Less Than High School Education	6%	11%	33	11%	36	13%	31
Population Under 5 years of age	7%	6%	68	6%	67	6%	64
Population over 64 years of age	12%	15%	38	14%	43	14%	47

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice