



# **Use Information for Persistent, Bioaccumulative, and Toxic Chemicals under TSCA Section 6(h)**

Office of Pollution Prevention and Toxics  
U.S. Environmental Protection Agency

September 7, 2017



# Overview

- Persistence and Bioaccumulation
- TSCA Section 6(h)
- Information on Uses
- Chemical Information Documents
- Summary of Information by Chemical
- Important Dates



# What is Persistence?

- A chemical's **persistence** is the length of time the chemical can exist in the environment before being destroyed (i.e., transformed) by natural processes
  - The environmental media for which persistence is measured or estimated include air, water, soil, and sediment. Water is the medium for which persistence values are most frequently available
  - It is important to distinguish between persistence in a single medium (air, water, soil, or sediment) and overall environmental persistence
  - This definition is used by the TSCA New Chemicals Program and TSCA Work Plan Methodology
  - Also see 64 FR 698; January 5, 1999 (Persistent Bioaccumulative Toxic Chemicals; Toxics Release Inventory proposed rule)



# What is Persistence?

- A chemical is characterized as persistent or very persistent using policy criteria based on science
  - A chemical is characterized as **persistent** if it has a half life in water, soil, or sediment of 2 months or more, or if it has a half-life in air of 2 days or more
  - A chemical is characterized as **very persistent** if it has a half life in water, soil, or sediments of 6 months or more



# What is Bioaccumulation?

- **Bioaccumulation** is a general term that is used to describe the process by which organisms may accumulate chemical substances in their bodies
  - This definition is used by the TSCA New Chemicals Program and TSCA Work Plan Methodology
  - Also see 64 FR 703; January 5, 1999 (Persistent Bioaccumulative Toxic Chemicals; Toxics Release Inventory proposed rule)





# What is Bioaccumulation?

- A chemical is characterized as bioaccumulative or very bioaccumulative using policy criteria based on science
  - A chemical is characterized as **bioaccumulative** if it has a bioconcentration factor (BCF) or bioaccumulation factor (BAF) greater than or equal to 1,000
  - A chemical is characterized as **very bioaccumulative** if it has a bioconcentration factor (BCF) or bioaccumulation factor (BAF) greater than or equal to 5,000



# Concern Regarding PBTs

- 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.



# TSCA Section 6(h)

- Section 6(h) of TSCA, as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, requires EPA to take expedited regulatory action to address risks from certain PBT chemicals.
- The provision includes certain criteria and selection restrictions for identifying the PBTs and does not mandate expedited action for PBT chemicals for which manufacturer requests for risk evaluations were received by September 19, 2016.
- The law gives EPA three years to propose rules to reduce risks and exposures from these PBT chemicals to the extent practicable.
- EPA must finalize the rules within 18 months of proposal.





# TSCA Section 6(h)

The Administrator shall propose rules under subsection (a) with respect to chemical substances identified in the 2014 update of the TSCA Work Plan for Chemical Assessments

- (A) **that the Administrator has a reasonable basis to conclude are toxic and that with respect to persistence and bioaccumulation score high for one and either high or moderate for the other, pursuant to the TSCA Work Plan Chemicals Methods Document** published by the Administrator in February 2012 (or a successor scoring system), and are not a metal or a metal compound, and for which the Administrator has not completed a Work Plan Problem Formulation, initiated a review under section 5, or entered into a consent agreement under section 4, prior to the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act; and
- (B) **exposure to which under the conditions of use is likely to the general population or to a potentially exposed or susceptible subpopulation** identified by the Administrator, or the environment, on the basis of an exposure and use assessment conducted by the Administrator.



# Importance of Information on Uses

- Use information is important for understanding conditions of use and developing risk management approaches
  - Identification of uses and how the chemical is used is an important step
  - Specific information on uses allows for more tailored risk management and exposure reduction approaches



# Process for Gathering Information

- EPA has been undertaking a systematic approach to identify uses
  - Information submitted previously to the Agency (such as TRI, PMNs and CDR)
  - Subscription information (e.g., CAS-STN, IHS Global, Descartes Datamyne)
  - Publicly available information from States
  - Open literature
  - Web searches, e.g. Amazon, Google, etc.



# Process for Gathering Information

- EPA has held and will continue to hold meetings with a range of stakeholders
  - Academics
  - Chemical manufacturers
  - Chemical users
  - NGOs
  - Other Federal agencies
  - States
  - Trade associations
  - Unions

# Process for Gathering Information

- EPA has established a docket and a point of contact for each of the 5 PBT chemicals
  - Links to dockets are in this presentation
  - Dockets close December 9, 2017
- Chemical information documents in the dockets present the information EPA has currently identified
- They are being provided so stakeholders can identify and provide to EPA information on uses and exposures that the stakeholder believes EPA should be aware of as the agency moves forward





# Chemical Information Documents

- A preliminary public summary of available information collected by OPPT on:
  - Manufacturing (including import)
  - Processing
  - Distribution in Commerce
  - Use
  - Disposal
- Available in each chemical's docket
- The following slides present many of the industrial, commercial, and consumer uses identified in these documents
  - Some uses fall into multiple categories



# Types of Information

- To inform the development of the exposure and use assessment for each chemical, EPA is interested in obtaining information on:
  - Industrial, commercial or consumer uses
  - Types of products containing each chemical
  - Types of articles containing each chemical
  - Industry sectors that use each chemical
  - Volumes of the chemicals used
  - Discontinued uses or phased out uses
  - Exposure scenarios, common engineering controls
  - Alternatives, flammability, solvency, etc.



# Decabromodiphenyl ether (DecaBDE)

- TSCA Work Plan Methodology:
  - Persistence: High
  - Bioaccumulation: High
- Uses include:
  - Flame retardant in high impact polystyrene-based products, rubber and plastics
  - Flame retardant in textiles, electronic equipment, and building and construction materials.
  - Articles include: carpets, upholstery fabric, back coatings, cushions, mattresses, tents, electrical appliances and equipment (stereos, computers, televisions, circuit boards, casings, and cable insulation)
- Contact: Cindy Wheeler [Wheeler.Cindy@epa.gov](mailto:Wheeler.Cindy@epa.gov), (202) 566-0484
- Docket: EPA-HQ-OPPT-2016-0724

# Hexachlorobutadiene (HCBD)

- TSCA Work Plan Methodology:
  - Persistence: High
  - Bioaccumulation: High
- Industrial and commercial uses include:
  - Heat Transfer fluid
  - Reactant
  - Solvent
  - Chlorine recovery
- Commercial and consumer uses include:
  - Fumigant/pesticide/algaecide
  - Textile coating
  - Hydraulic fluid
  - Gyroscope fluid
- Manufactured as a byproduct of solvent production (perchloroethylene, trichloroethylene, carbon tetrachloride, and possibly methylene chloride)
- Contact: Marc Edmonds [Edmonds.marc@epa.gov](mailto:Edmonds.marc@epa.gov), (202) 566-0758
- Docket: EPA-HQ-OPPT-2016-0738



# Pentachlorothiophenol (PCTP)

- TSCA Work Plan Methodology:
  - Persistence: High
  - Bioaccumulation: High
- Industrial and commercial uses include:
  - Rubber peptizer
- Commercial and consumer uses include:
  - In laboratories in small quantities for research purposes.
- Contact: Marc Edmonds  
[Edmonds.marc@epa.gov](mailto:Edmonds.marc@epa.gov), (202) 566-0758
- Docket: EPA-HQ-OPPT-2016-0739





# Phenol, isopropylated, phosphate (3:1)

- Phenol, isopropylated, phosphate (3:1) constitutes a family of structures in which each of the three aryl groups must contain at least one isopropyl group
- Examples of chemicals covered by Phenol, isopropylated, phosphate (3:1) include:
  - Tris(3-isopropylphenyl) phosphate
  - Tri(isopropylphenyl) phosphate
  - Tri(4-isopropylphenyl) phosphate



# Phenol, isopropylated, phosphate (3:1)

- TSCA Work Plan Methodology:
  - Persistence: High
  - Bioaccumulation: High
- Uses Include:
  - Electronic device casings and circuit boards
  - Electrical wires/cables
  - Paints and coatings for building materials
  - Foam upholstery, textile fibers, carpets, and curtains
  - Automotive plastics, foams, and fabrics
  - Lubricants (grease, oil, hydraulic fluid)
- Contact: Randy Yakal [Yakal.randy@epa.gov](mailto:Yakal.randy@epa.gov), (202) 564-4127
- Docket: EPA-HQ-OPPT-2016-0730



# 2,4,6-Tris(tert-butyl) phenol

- TSCA Work Plan Methodology:
  - Persistence: Moderate
  - Bioaccumulation: High
- Industrial and commercial uses include:
  - Fuel, oil, and lubricant additive
- Commercial and consumer uses include:
  - Fuel additives and stabilizers
- Contact: Todd Coleman  
[Coleman.Todd@epa.gov](mailto:Coleman.Todd@epa.gov), (202) 564-1208
- Docket: EPA-HQ-OPPT-2016-0734



# Important Dates

- **December 9, 2017:** Dockets for use information close
- **June 19, 2019:** EPA is required to propose regulations to reduce exposure to the extent practicable for these chemical substances