The webinar will begin shortly.

Safer Products for Washington: Recreational polyurethane foam (9:30 a.m.) Food and drink cans (12 p.m.)

Implementing RCW 70A.350: The Pollution Prevention for Healthy People and Puget Sound Act

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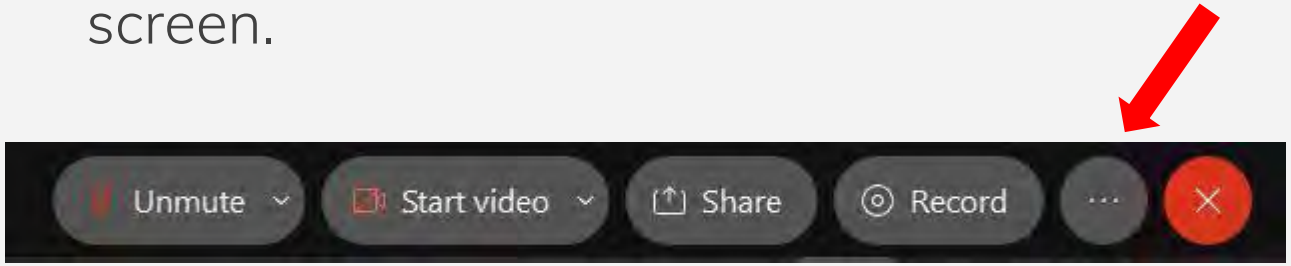
JULY 13, 2021

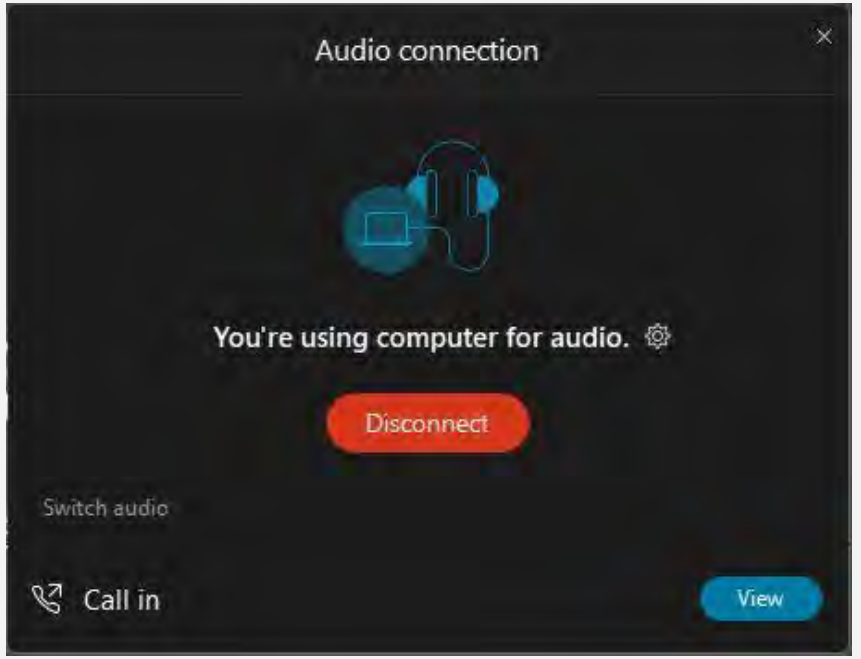
DEPARTMENT OF ECOLOGY State of Washington

Washington State Department of Health

Audio connection logistics

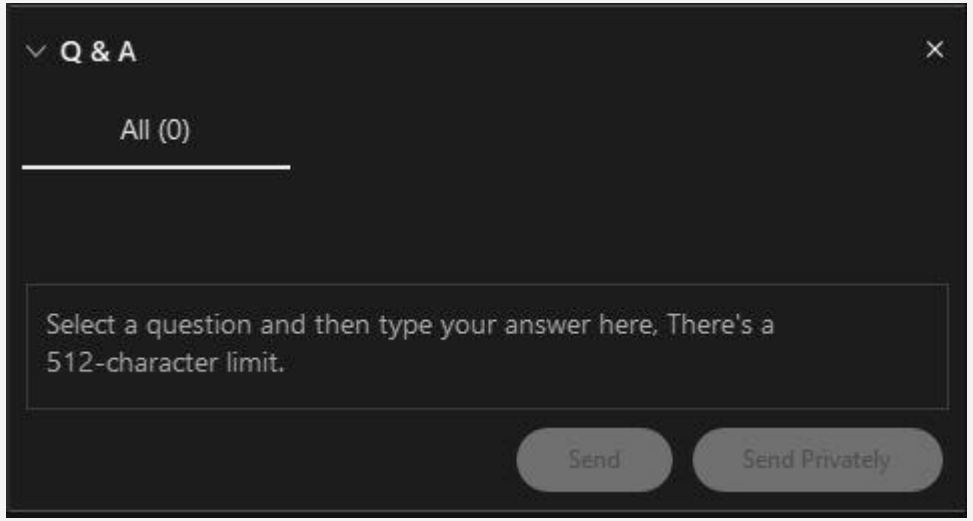
- For audio connection, we recommend using your computer speaker.
- If you are unable to join using computer audio, use “Call in” to access dial-in information.
- To open the audio options, select the three dots icon in the menu at the bottom of your screen.





Webinar logistics

- All lines are muted.
- Questions and input go in the Q & A box.
  - Ask anytime, we will address at the end.
- Technical difficulty issues go in the chat box.
- To open the chat box, select the chat button at the lower right hand side of your screen.
- In the event of major technical difficulties, we will reschedule the webinar.



- NOTE: Any reference in this presentation to persons, organizations, services, or activities does not constitute or imply endorsement, recommendation, or preference by the Washington State Department of Ecology.

Safer Products for Washington:

Recreational polyurethane foam

From Ecology: Cheryl Niemi, Marissa Smith, Saskia van Bergen, Craig Manahan, Sascha Stump, Rae Eaton, Kimberly Goetz, Lauren Tamboer, and Amber Sergent.

From Health: Holly Davies, Elinor Fanning, and Emily Horton.

Today's schedule

1. 9:30—Recap: Safer Products for Washington background
2. 9:40—Recreational polyurethane foam
3. 10:20—Questions and discussion on foam

11:30—Break

1. 12:00—Recap: Safer Products for Washington background
2. 12:10—Food and drink cans
3. 12:50—Questions and discussion on food and drink cans
4. 2:00—Overview of all product categories

Section 1. Safer Products for WA background

Safer Products for WA background

- Pollution Prevention for Healthy People and Puget Sound Act, signed into law May 2019.
- Act aims to reduce exposures to priority chemicals resulting from the use of consumer products.
- Act sets requirements for Ecology to:
  - Report to Legislature.
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- Safer Products for Washington is the implementation program for RCW 70A.350.

Safer Products for WA Implementation Process

See an accessible version of this graphic.

A reminder: Phase 2 priority products

Priority chemical or chemical class	Priority product in the report
Flame retardants	Electric and electronic equipment
Flame retardants	**Recreational polyurethane foam**
PCBs	Paints and printing inks
PFAS	Carpet and rugs
PFAS	Aftermarket stain and water resistance treatments
PFAS	Leather and textile furnishings
Phenolic compounds (alkylphenol ethoxylates)	Laundry detergent
Phenolic compounds (bisphenols)	Thermal paper
Phenolic compounds (bisphenols)	**Food and drink cans**
Phthalates	Flooring
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Priority products report: https://apps.ecology.wa.gov/publications/documents/2004019.pdf

Regulatory determinations

- In order to restrict the use of a priority chemical, **safer** alternatives must be **feasible** and **available.**
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- Safer is defined in the law as "less hazardous to humans or the environment than the existing chemical or process."
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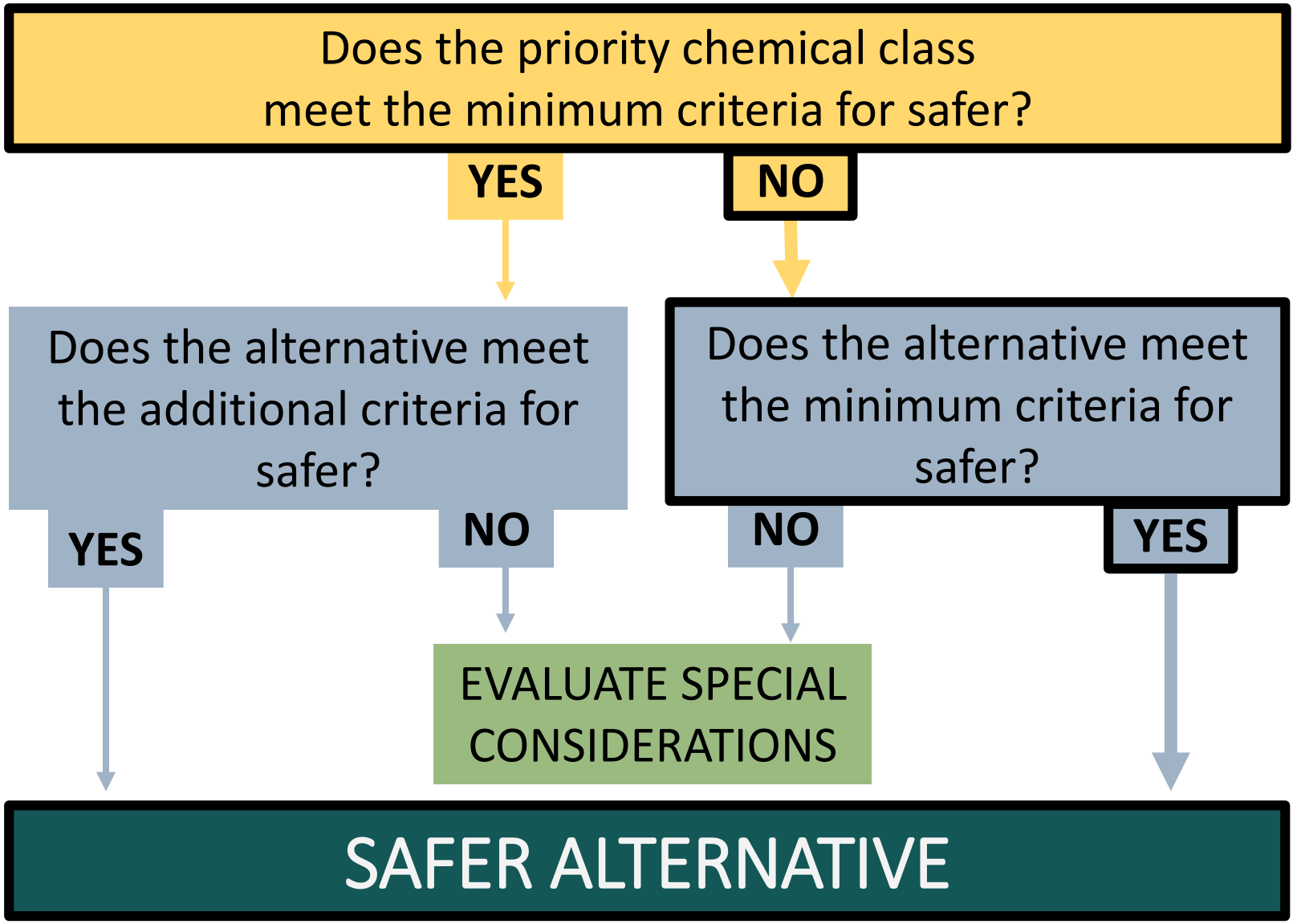
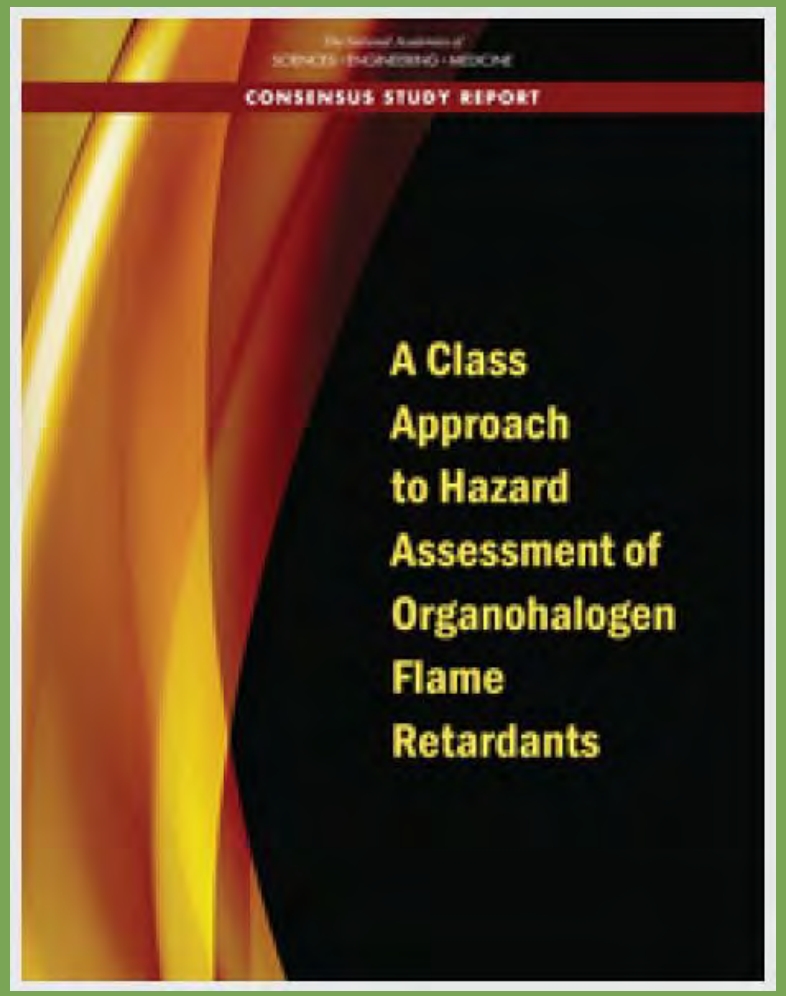
Criteria for safer is a *spectrum*

Process for identifying safer alternatives





How can we assess classes of chemicals?

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Certifications and assessments that meet our minimum criteria for safer

Examples of chemicals that meet this criteria:

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Examples of products that **may** meet this criteria:

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- EPA Safer Choice Products
- Cradle to Cradle Certified™ Gold and Platinum Material Health Certificate products
  - More documentation of persistence and bioaccumulation may be necessary.

Feasible and available

- RCW 70A.350 requires that Ecology determine that safer alternatives are “feasible and available” before restricting the use of a priority chemical.
- Not defined in the statute.
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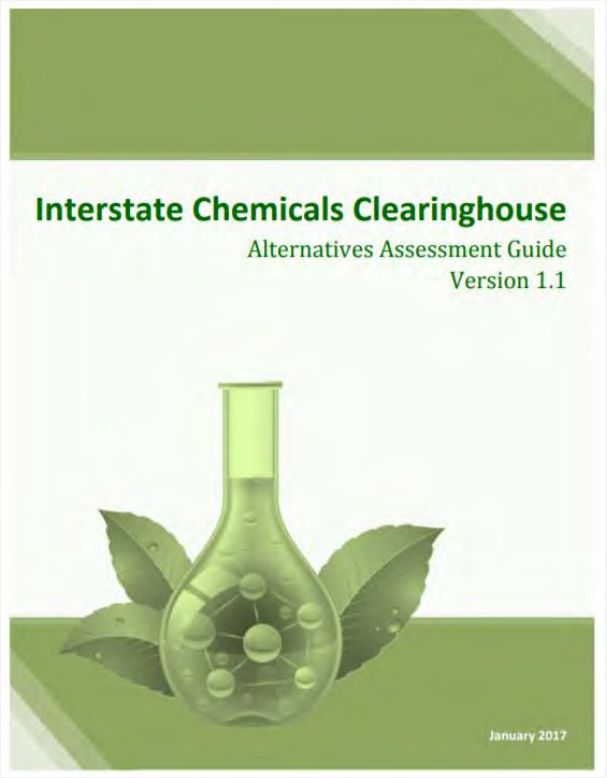
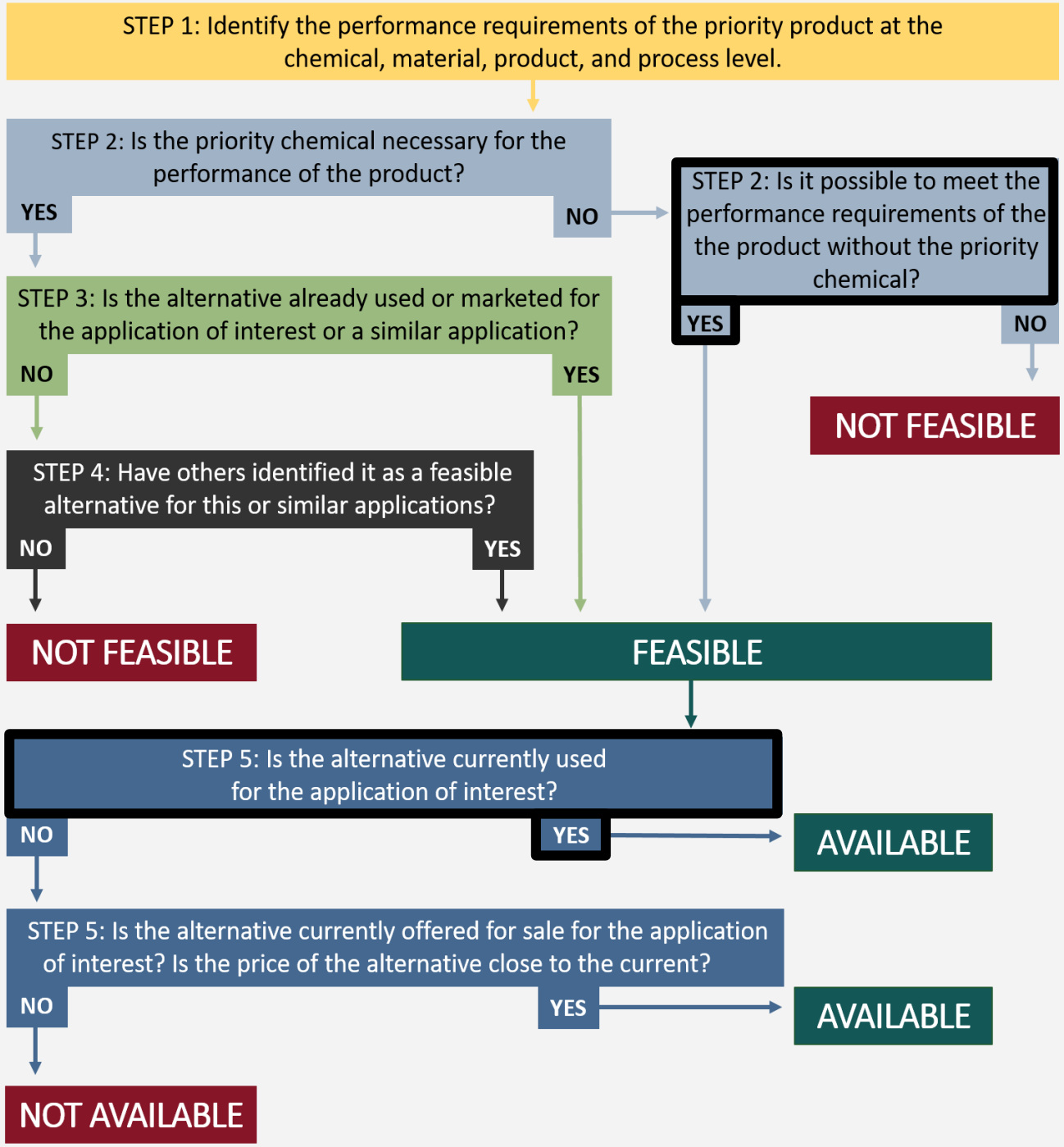


Process for identifying feasible and available alternatives



See an accessible version of this graphic.

Section 2. Recreational polyurethane foam

Flame retardants in recreational polyurethane foam products

- In 2019, the Legislature listed flame retardants as a priority chemical class.
- Identified recreational polyurethane foam products as a significant source or use of flame retardants.
- Listed them as a priority product in our 2020 report.
- We identified flame retardant free recreational polyurethane foam as available.
- Currently evaluating the feasibility of flame retardant free polyurethane foam as an alternative.
- We welcome your input!

Recreational polyurethane foam is a significant source of flame retardants

- Several flame retardants are used in recreational polyurethane foam.
- Flame retardants concentration in products is often greater than 1%.
  - Reported to range from **2% to 6.5%.**
- Estimated in Washington:
  - Over 500,000 foam pit blocks.
  - 800,000 square feet of padded mats.

Recreational polyurethane foam is a significant source of flame retardants

- Sensitive populations are exposed:
  - Gym workers.
  - Gymnasts.
  - Children.
  - People of childbearing age.
- Studies show increased exposure in gymnasts after training in a gym with polyurethane foam containing flame retardants.
- Intervention study demonstrated a 5.4-fold decrease in flame retardants on gymnasts skin after changing to FR-free pit foam.
  - Dembsey et al., 2019

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- A safer alternative to a particular chemical may include:
  - A chemical substitute.
  - **A change in materials or design that eliminates the need for a chemical alternative.**
- The alternative we are evaluating is recreational polyurethane foam **without flame retardant chemicals**.

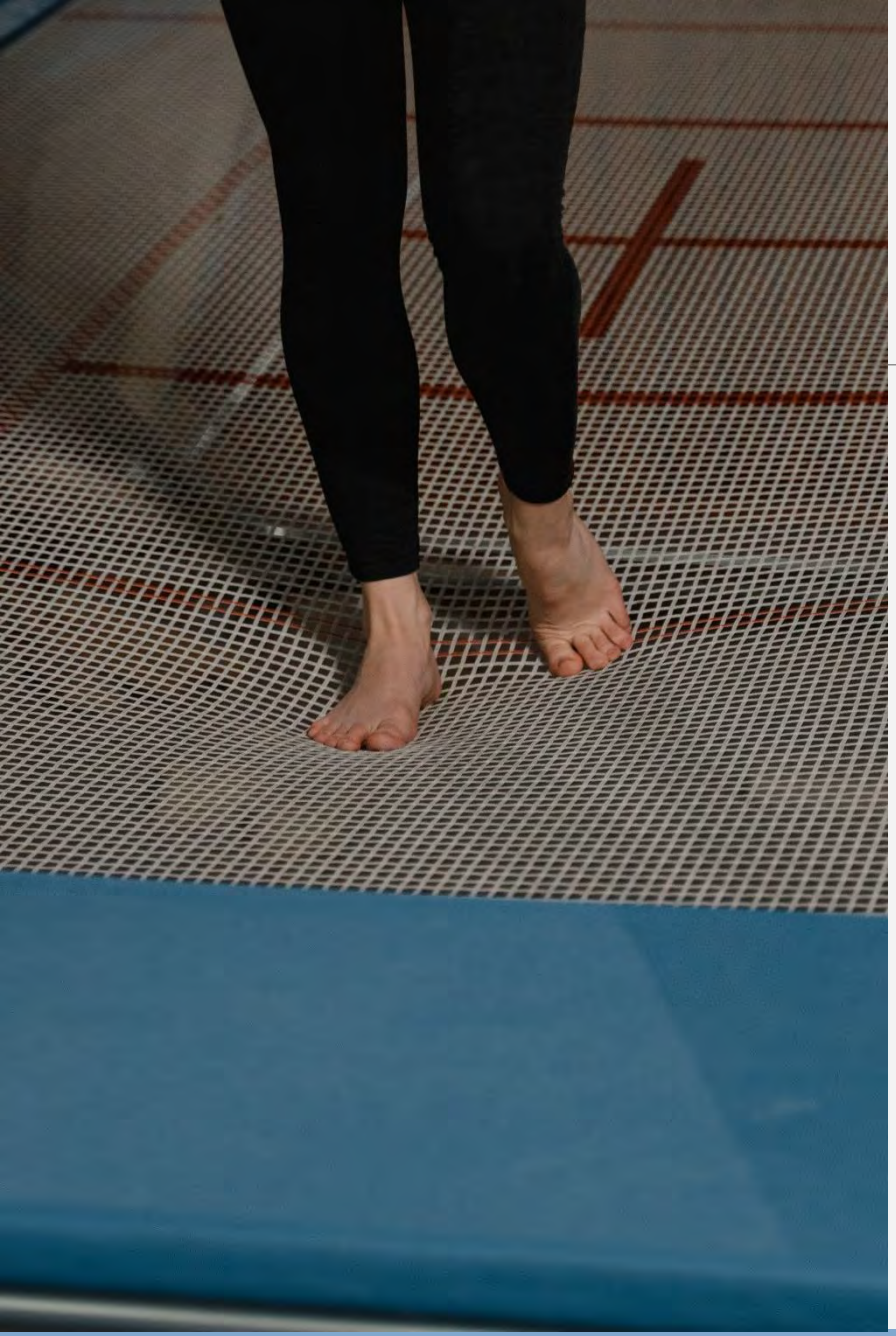
Flame retardants scope

- RCW 70A.350 defines flame retardants as **organohalogen flame retardants (OFRs)** and additionally those identified under RCW 70A.430.
- **OFRs as a chemical class** are described in the priority products report as chemicals meeting the following criteria:
  - **1.** The chemical is used with the intended function of slowing ignition and progression of fires.

    AND
  - **2.** The chemical contains one or more halogen elements bonded to carbon.

Flame retardants scope continued

- Additional flame retardants identified in RCW 70A.430 are organophosphate flame retardants (OPFRs).
- RCW 70A.430 identifies specific OPFRs:
  - Triphenyl phosphate (TPP)
  - Tri-n-butyl phosphate (TNBP)
  - Ethylhexyl diphenyl phosphate (EHDPP)
  - Tricresyl phosphate (TCP)
  - Isopropylated triphenyl phosphate (IPTPP)
- Potential restriction on flame retardants in recreational polyurethane foam could include:
  - The entire class of OFRs.
  - Additional OPFRs identified under RCW 70A.430.



Identifying relevant OFRs

- We referenced the National Academies of Sciences 2019 report:
  - **A Class Approach to Hazard Assessment of Organohalogen Flame Retardants**
- Report identified 161 OFRs with reported use.
- We determined further sub-classification was not required to conduct our hazard analysis of the OFRs class.

Identifying data rich chemicals

We identified data rich chemicals in the class by looking for existing hazard assessments:

- GreenScreens®—conducted by a licensed profiler, publicly available.
- Authoritative Lists—review of supporting documents.
- Other hazard assessment methods are possible, but would need to be:
  - Compatible with our criteria for safer and scoring methodology.
  - Publicly available or third-party reviewed.

GreenScreen®
BM-1
Authoritative lists

GreenScreen®
BM-2

GreenScreen®
BM-2*
BM-3

**not all BM-2 meet additional criteria*

Criteria for safer is a *spectrum*

Hazards of OFRs

Members of the class are associated with:

- Carcinogenicity
- Endocrine activity
  - Disruption of hormone systems.
- Developmental toxicity
  - Neurological development.
- Reproductive toxicity
  - Reduced fertility.
- Aquatic toxicity
- Persistence and bioaccumulation
  - OFRs persist in the environment.
  - Contributes to chronic exposure.

Summary of OFRs assessments

- Identified 11 of 161 OFRs with existing GreenScreen® assessments.
- 7 OFRs scored as **Benchmark-1**:
  - Short chain chlorinated paraffins (SCCP)
  - Decabromodiphenyl ethane (DBDPE)
  - Tetrabromobisphenol A (TBBPA)
  - Ethylene bis(tetrabromophthalimide) (EBTBP)
  - Tris(2-chloroethyl) phosphate (TCEP)
  - Tris(1,3-dichloro-2-propyl) phosphate (TDCPP)
  - 1,3,5-triazine-2,4,6-tris(2,4,6-tribromophenoxy) (TTBP-TAZ)
- Identified 83 of 161 OFRs that score as **LT-1** using GreenScreen® list translator due to their presence on authoritative lists.

Summary of OFRs assessments continued

- Identified 11 of 161 OFRs with existing GreenScreen® assessments.
- 3 OFRs scored as BM-2:
  - 2,2-bis(chloromethyl)trimethylene bis(bis(2-chloroethyl)phosphate) (V6)
  - 2-Ethylhexyltetrabromobenzoate (TBB)
  - Bis(2-ethylhexyl) tetrabromophthalate (TBPH)
- 1 OFR scored as **BM-U**:
  - Tris(2-chloroisopropyl phosphate) (TCPP)

Conclusion: Hazards of OFRs

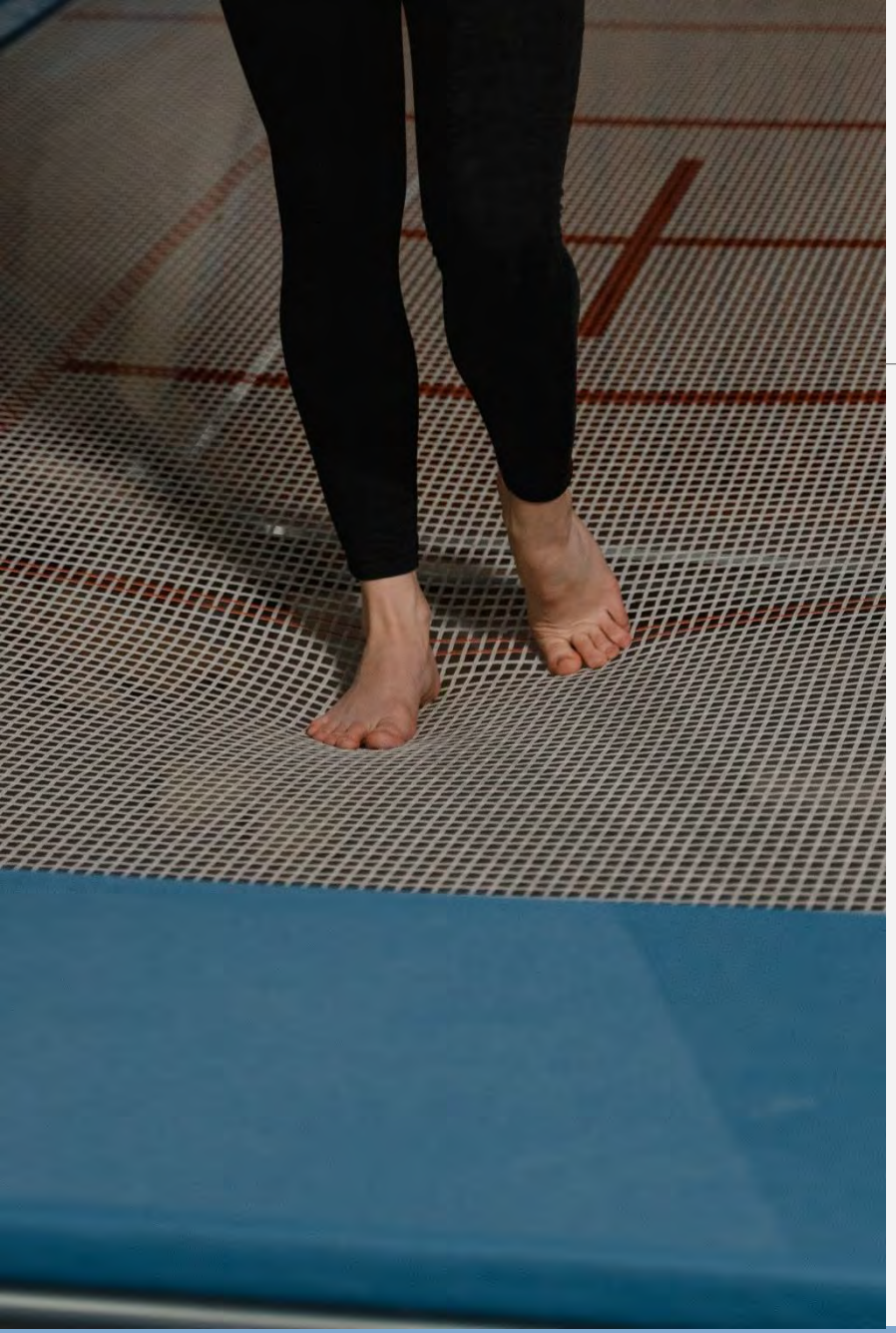
- **The class of organohalogen flame retardants (OFRs) will be treated as potentially hazardous.**
- Some variation in hazard scores across members of the OFRs class—but none are sufficiently less hazardous to be excluded.
- Vast majority of OFRs:
  - Score as **Benchmark-1** or **LT-1** chemicals.
  - Are present on authoritative and screening lists for multiple human health hazard endpoints.

Conclusion: Hazards of identified OPFRs

- **Not evaluating OPFRs as a class—only those listed under RCW 70A.430.**
- Identified 3 of 5 with existing GreenScreen® assessments.
  - Tricresyl phosphate (TCP) – **BM-1**
  - Triphenyl phosphate (TPP) – **BM-2**
  - Tris(4-isopropylphenyl) phosphate (IPTPP) – **BM-2**
- Products containing OPFRs identified under RCW 70A.340 are **still more hazardous than products without flame retardants**.

**not all BM-2 meet additional criteria*

Criteria for safer is a *spectrum*



Recreational polyurethane foam without flame retardants is safer

- The alternative we are evaluating is recreational polyurethane foam (PUF) **without flame retardant chemicals**.
- This removes the priority chemical, so it is a **safer alternative**.
- However, to be a **feasible alternative**, the performance requirements still need to be met.
- The performance requirements relate to **fire safety**.

Available: Polyurethane foam without flame retardants

- Several manufacturers and vendors sell PUF without flame retardants.
- Example products include:
  - Pit cubes
  - Landing mats
  - Mat replacement foam
- Screening results of gymnastic pit cubes:
  - 6 out of 39 foam samples did not intentionally use any of the flame retardants tested (Cooper et al., 2016).

Feasible: Flame retardant free foam

- **Flame retardant free foam is feasible in at least some applications.**
- Example case study by TURI: Gym in Massachusetts
  - Wanted to switch to foam pit cubes without flame retardants.
  - Hired a Fire Protection Engineer (FPE) and conducted flammability testing.
  - Engaged the fire protection community.
  - Based on appropriate fire control and response measures, **the local fire department approved replacing existing cubes.**
  - Local building department also approved.

Source: WPI

TURI case study—Flammability testing

- Used two experimental procedures to determine the difference in flammability of cubes with flame retardants versus cubes without.
- Lit cigarettes are not enough to cause any of the systems to ignite.
- Foam pits with or without FRs can produce severe fires when exposed to a small, open flame ignition source.
- See more in the WPI report: www.turi.org/Our_Work/Business/Small_Businesses/Gymnastics_Facilities/WPI_Pit_Cube_Report

Feasible: Fire control & response measures

- **Gym fires are infrequent.**
- **If ignition sources (like cigarettes or welding sparks) are restricted from the area, the fire potential is minimal.**
- However, to ensure fire safety, the FPE report suggested certain measures including:
  - An approved fire evacuation plan.
  - Posted maximum occupancy.
  - Appropriate sprinkler system with an alarm to a monitoring station.
  - Egress from all points in the building compliant with building code.
  - Adherence to all state and local requirements for fire protection.

Considerations for potential restrictions

- Recreational flame retardant free foam **products with vinyl covers are likely feasible**.
  - Indicates that a restriction is a possible determination.
- Evidence indicates **flame retardant free foam pit cubes are feasible in some facilities**.
  - Would likely result in a restriction for those uses.
  - However, we need to learn more to assess if it is feasible in all facilities in Washington.
- **Next step**—continue engaging individuals and organizations, such as:
  - More fire marshals
  - More local fire departments
  - State Building Code Council
  - More facility staff who use flame retardant free foams

Questions we're trying to address

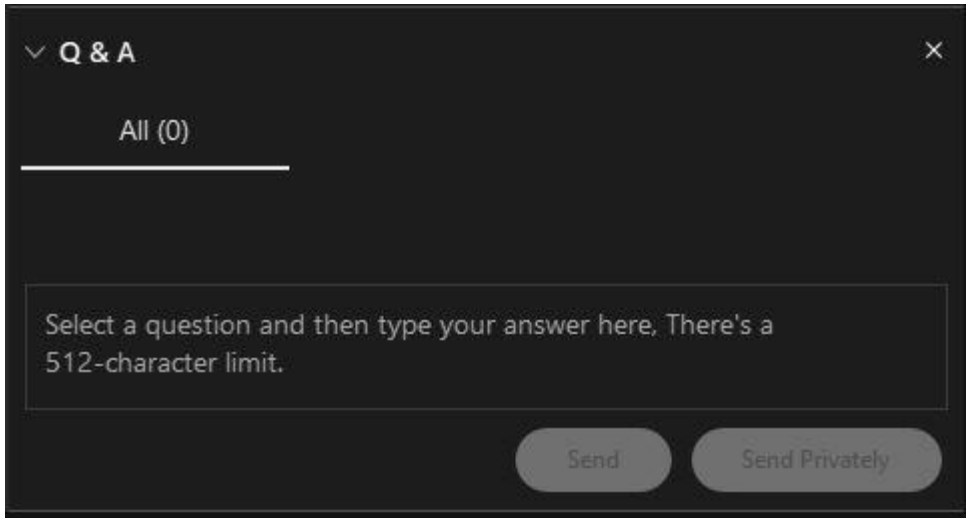
- For foam applications that use a vinyl cover, are all required fire safety standards met with the cover?
  - If not, what standard is required and who is requiring it?
- Do any local authorities in Washington require the foam found in foam pits to meet California TB-117 (prior to 2013)?
  - If not, are any other "flame retardant" or "fire resistant" safety standards required for this type of product that might require flame retardants? If so, please share information.
- Are there any facilities in Washington that contain recreational foam pits but do not have sprinklers?
  - If so, which facilities?
- Are you a gym owner in Washington who asked your suppliers for flame retardant free foam pit cubes and got approval from your local fire department?
  - If so, would you be willing to talk with us?

Section 3. Polyurethane foam discussion

Questions? Input to share?

Type in the Q & A box or raise your hand to unmute.

- Direct your question to everyone using the drop down arrow.
- If you need more than 512 characters, ask your question or give your input verbally.
- Raise your hand and we will unmute you to give your input.
  - If you're dialing in via phone, dial *3 to raise your hand.



Recreational polyurethane foam

Feedback category	Feedback from stakeholders during the July 13 discussion
Analysis process	• Two year National Toxicology Program study on TCPP should be considered.
Foam performance, feasibility of flame retardant free foam	• Fire code might need to be changed to allow for installation of flame retardant free foam on walls, etc. • National Fire Protection Association may be a helpful resource.
Potential regulation	• Impact on smaller gyms without sprinklers (or older gyms). • Will gyms be required to replace their current foam? • Ecology should develop guidelines for removing flame retardant containing dust (such as cleaning, ventilation, and air filtration).
Other feedback	• Scope should include other uses besides gyms—such as daycares, homes, etc. • Some potential products of concern are foam wall pads (1) and football training tools (2). • Many foam products that are not found in pits should be considered recreational foam, like vertical pads for football training. Many products being marketed that are this material for sporting practice.

- 1. https://www.perfsports.com/products/standard-polyurethane-foam-wall-pad
- 2. https://football.epicsports.com/prod/113554/athletic-specialty-football-step-over-dummy.html?gclid=CjwKCAjw87SHBhBiEiwAukSeUcDukCW-w_el9CS0zEUqRhKBMpqMpWzL85v-JyjXoR8AinU4sbcbsRoCGgcQAvD_BwE

Get involved with our Phase 3 process

- Share your input on the working draft criteria for safer, feasible, and available.
- Don’t miss product-specific webinars this summer.
- Invite us to present to your group.
- Reach out to us to set up a meeting with our team.

Stakeholder involvement next steps

- Make sure you are on our email list!
- Product-specific webinars continuing this summer.
- Formal public comment period on draft regulatory actions report (Fall 2021 – Winter 2022).

Where are we at on the other products?

Priority product	Priority chemical class	Status	Webinar target
Can linings	Bisphenols	Evaluating C2CC™ beverage can linings for safer, feasible, and available, looking for food can alternatives	Update at 12pm
Aftermarket treatments	PFAS	Evaluating Safer Choice carpet care products, identified other PFAS-free alternatives, working with manufacturers to evaluate safer	July 27, 9:30 a.m. PST
Personal care and beauty products	Phthalates	Identified dipropylene glycol as safer, feasible, and available, evaluating benzyl alcohol and alternatives on the Safer Chemical Ingredients List	July 27, 12 p.m. PST
Furniture and furnishings	PFAS	Looking for alternative ways to increase cleanability. Identified untreated fabric, inherently stain resistant fabric, wipeable fabric, and washable covers as potential alternatives.	Update Late-Summer

Have ideas or input on any of these products? Please reach out! We'd love to hear from you!

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Priority product	Priority chemical class	Status	Webinar target
Carpets and rugs	PFAS	Evaluating C2CC™ products and non-chemical alternatives	Late-Summer
Vinyl flooring	Phthalates	Ordered data from manufacturers, evaluating alternative plasticizers	Late-Summer
Printing inks	PCBs	Conducting product testing study, working on identifying inks with lower PCB concentrations	Late-Summer
Electric and electronic products	Flame retardants	Conducting product testing study, evaluating alternatives listed on TCO's positive list (GreenScreen® BM-2 or higher)	Late-Summer

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Safer Products for Washington:

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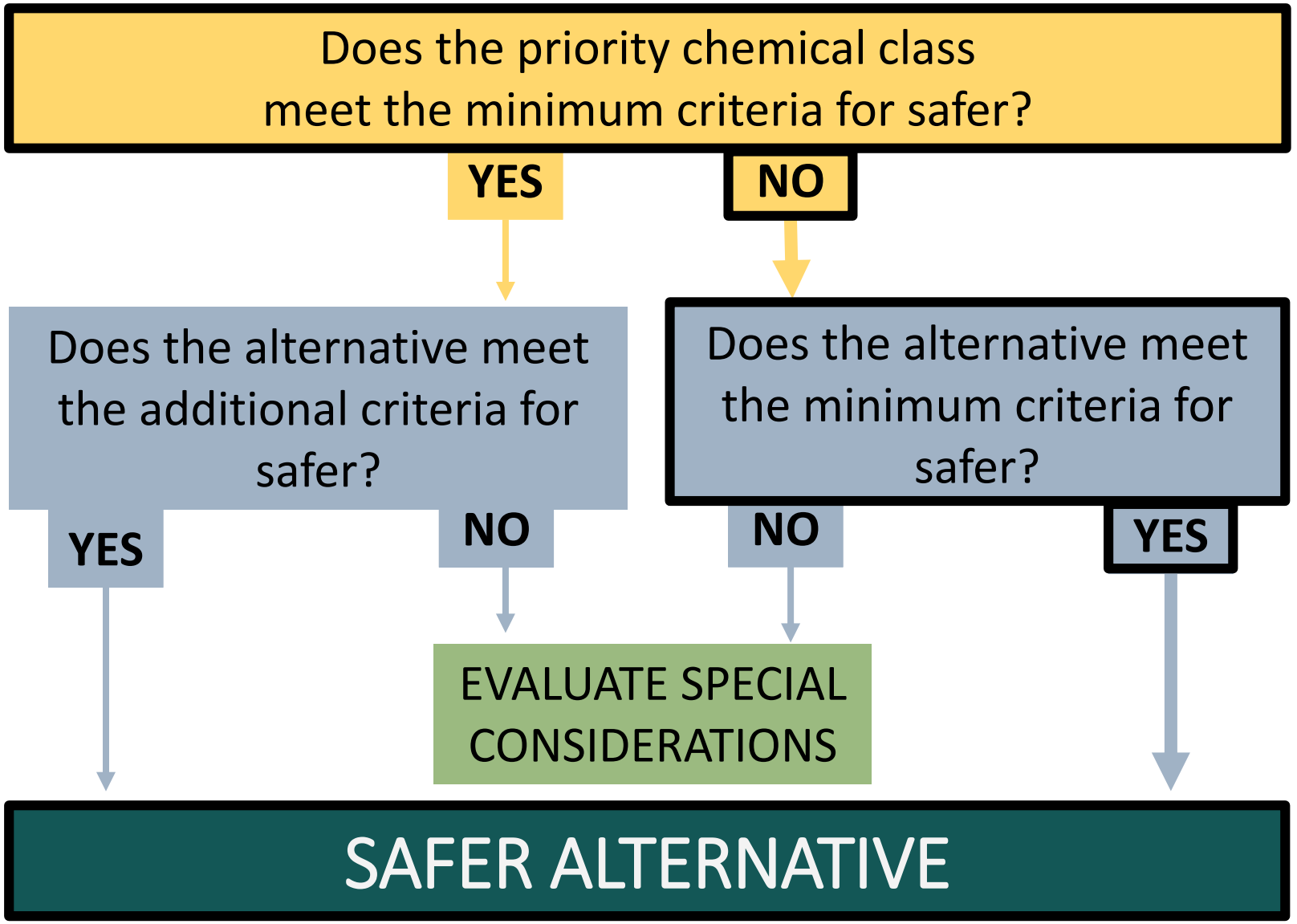

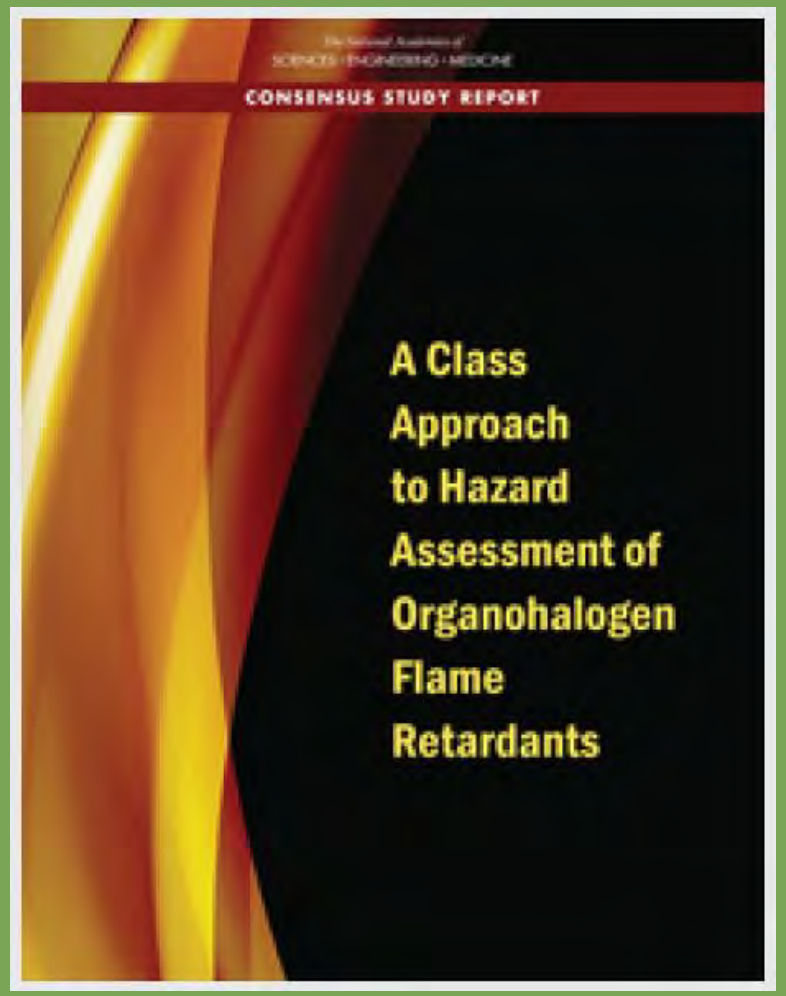

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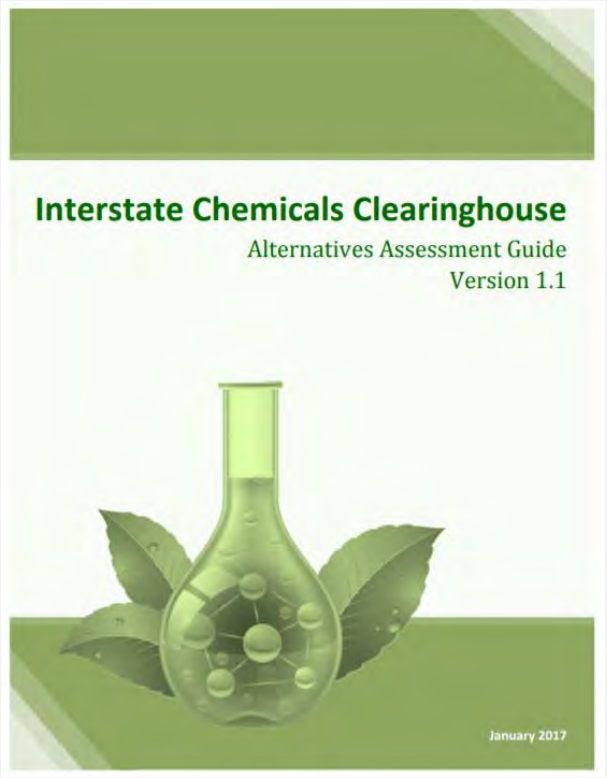

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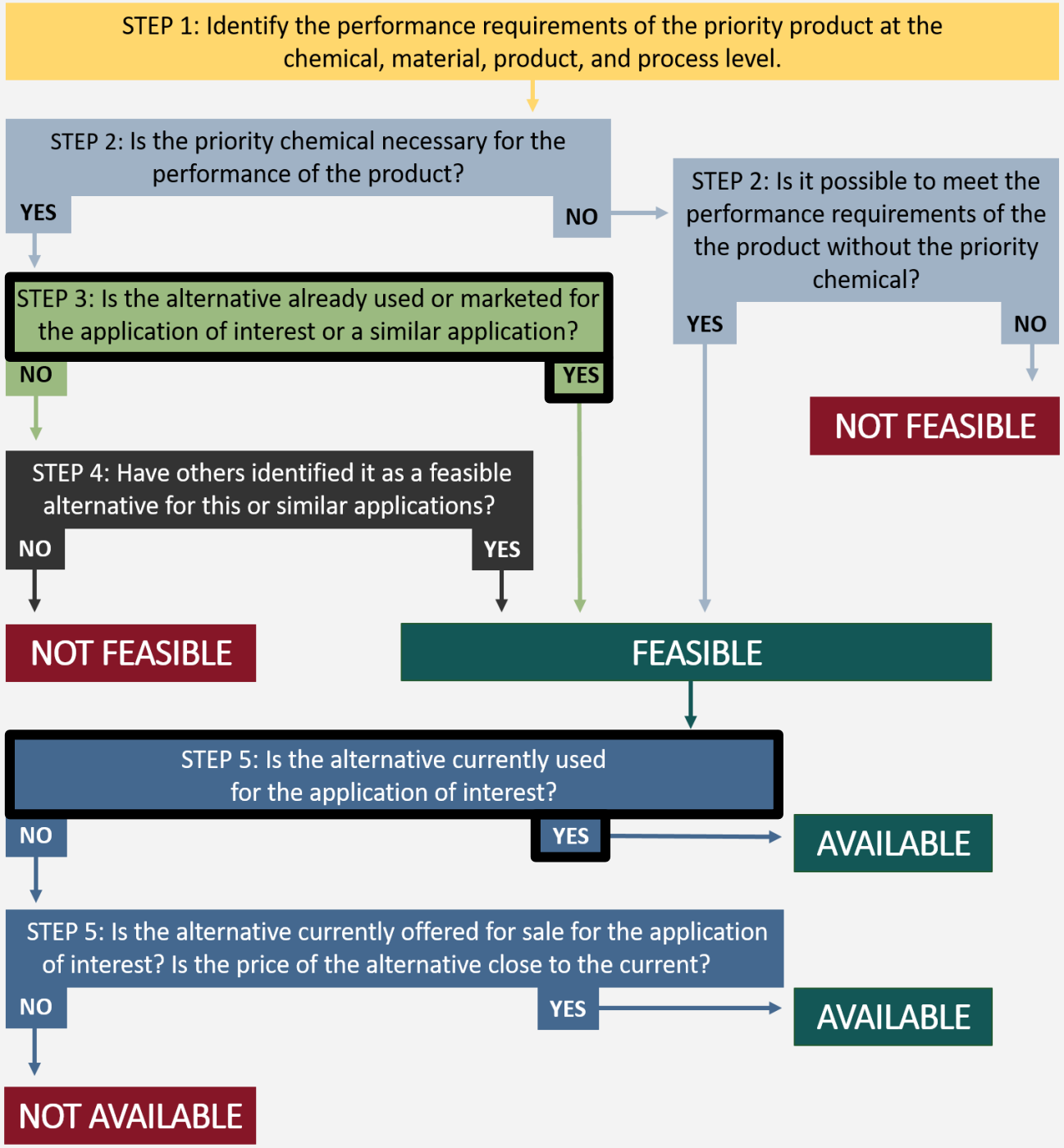
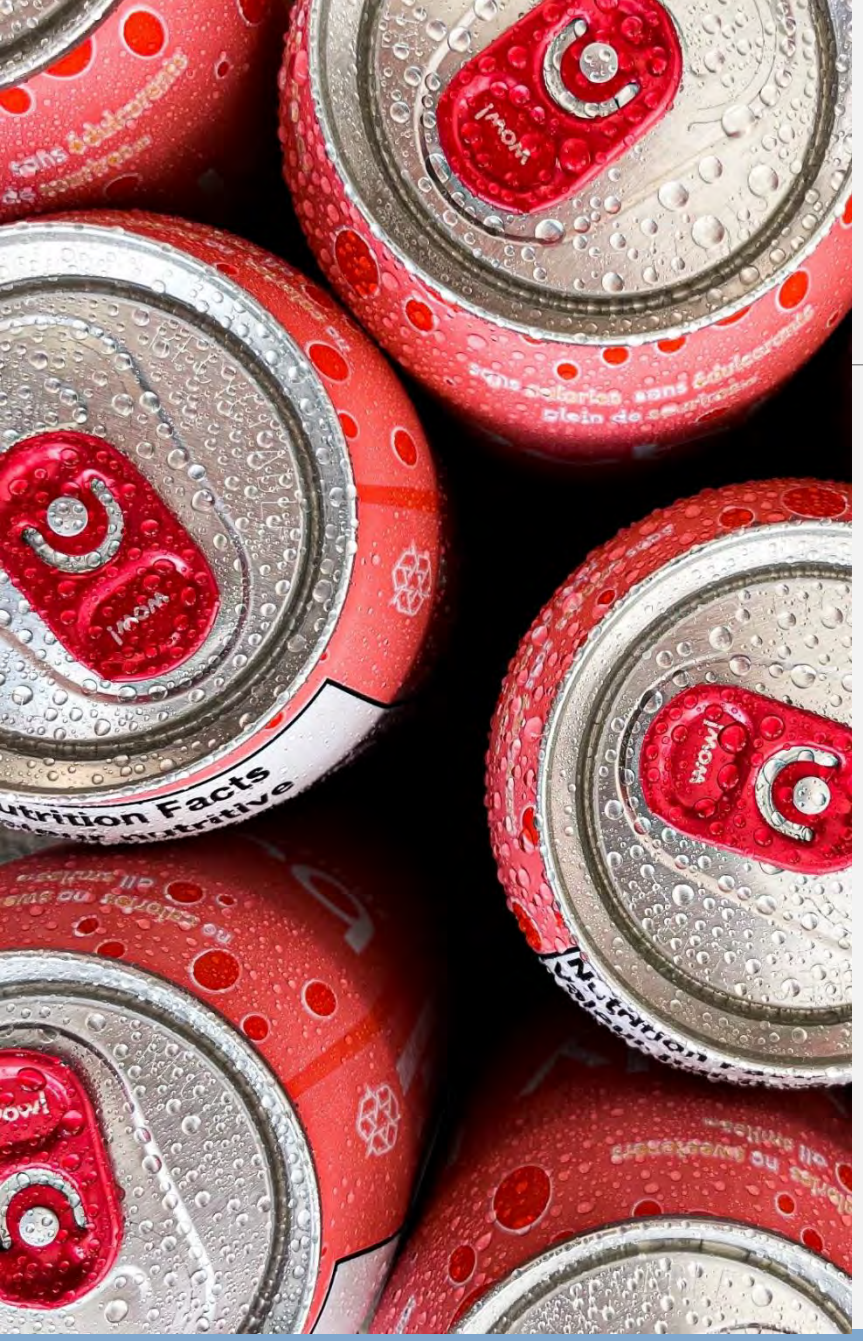


See an accessible version of this graphic.

Section 2. Food and drink cans



Bisphenols in food and drink cans

- In 2019, Legislature listed bisphenols as a priority chemical class.
- Identified food and drink cans as a significant source or use of bisphenols.
- Listed them as a priority product our 2020 report.
- We identified safer chemical alternatives that are feasible and available for some drink can applications.
- We’re working to evaluate alternatives for food cans.
- Analysis currently supports a restriction on use of bisphenols in some can lining applications consistent with RCW 70A.350.
- We welcome your input!

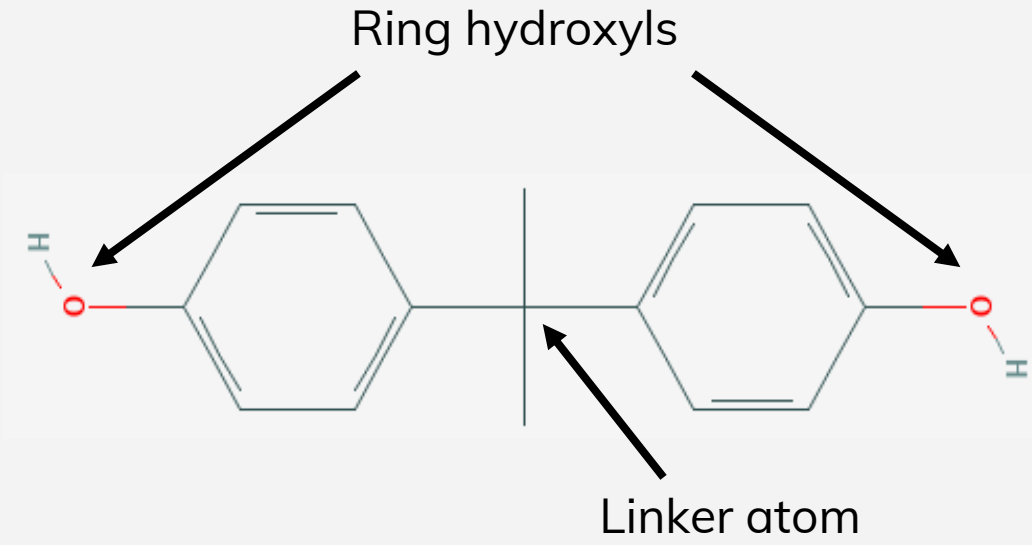
Food and drink cans are a significant source of bisphenols

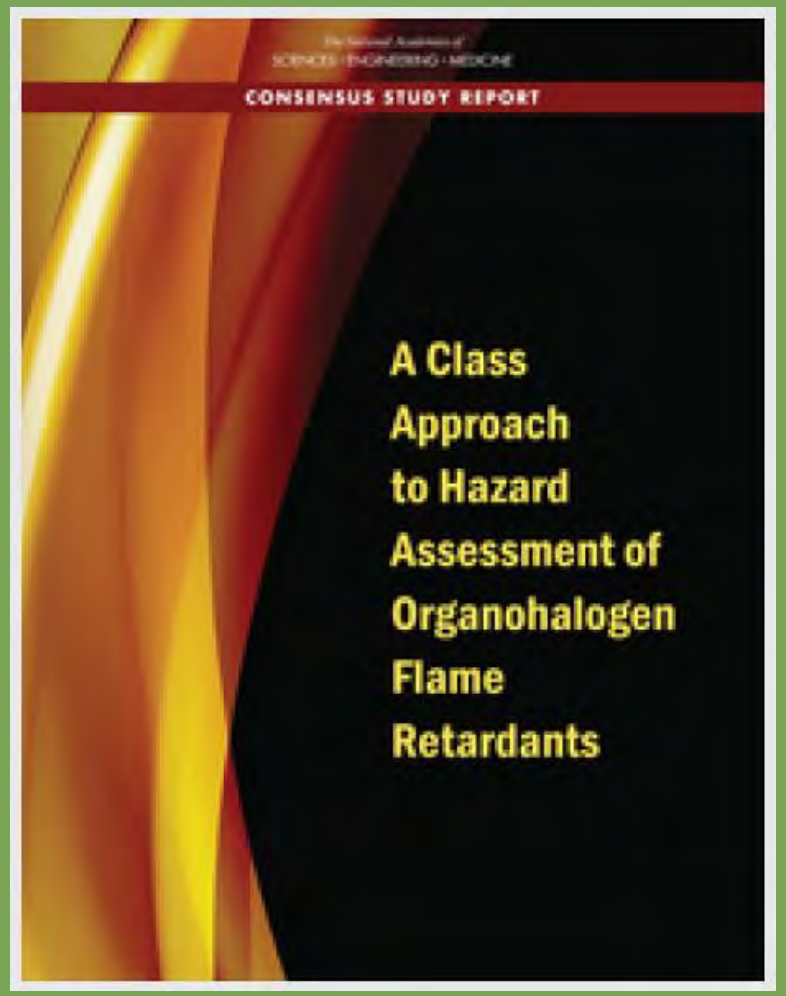
- Food and drink cans are a significant source or use of phenolic compounds, including bisphenols.
- Estimated 2.5 billion food and drink cans sold each year in Washington.
- “According to coatings specialists, roughly 80%” of epoxy coatings used in can linings are BPA-based.
- Several studies detected BPA in canned food—prevalence ranging from 32% – 100% of samples tested.
- Can Manufacturers Institute communicated that in their 2020 testing, BPA was only detected in 2 of 234 samples.
- Dietary route is the largest source of exposure to BPA.

Scope of the priority chemical class

Bisphenols can be defined based on their chemical structure—we propose the following guidelines to further clarify this definition:

1. Must have two, six-membered aromatic rings connected by a linker atom.
2. The linker atom can also be substituted but the linker length must be a single atom.
3. Both rings must have at least one hydroxyl substituent (i.e. phenol rings).





How can we assess classes of chemicals?

1. If there are all data rich chemicals → Assess the class based on data rich chemicals.
2. If there are all data poor chemicals → Unlikely to be a priority chemical class.
3. If there are data rich and data poor chemicals → Assess the class based on data rich chemicals.
4. If there is variable or discordant hazard data → Three options.
    1. Make a conservative decision and use the minimum criteria.
    2. Classify based on the chemicals potentially found in the products.
    3. Identify chemicals that meet the within-class criteria for safer and exclude those.

Identifying data rich chemicals

We identified data rich chemicals by looking for existing hazard assessments:

- GreenScreens®—conducted by a licensed profiler, publicly available.
- Authoritative Lists—review of supporting documents.
- Other hazard assessment methods are possible, but would need to be:
  - Compatible with our criteria for safer and scoring methodology.
  - Publicly available or third-party reviewed.

Identified GreenScreen® assessments

- Bisphenol A
- Bisphenol S
- Bisphenol F
- Bisphenol AF
- Tetrabromo bisphenol A
- Tetramethyl bisphenol F

GreenScreen®
BM-1
Authoritative lists

GreenScreen®
BM-2

GreenScreen®
BM-2*
BM-3

**not all BM-2 meet additional criteria*

Criteria for safer is a *spectrum*

Hazards of data rich bisphenols

- Endocrine activity
  - Estrogenic, anti-androgenic, thyroid effects.
- Developmental toxicity
  - Neurodevelopment, immune system development, reduced sexual dimorphism, premature birth, low birth weight.
- Reproductive toxicity
  - Reduced fertility.
- Aquatic toxicity
- Persistence (halogenated bisphenols)

Bisphenol A

- Scored as **LT-1**; **BM-1** in a GreenScreen® assessment (TechLaw, 2012).
- Included on authoritative lists for endocrine activity, developmental toxicity, and reproductive toxicity, and scores as high for acute aquatic toxicity.
- Does not meet our minimum criteria.

CASRN	Common name	GreenScreen® Score	Authoritative lists	Screening lists	Existing WA regulations
80-05-7	Bisphenol A	**LT-1** **BM-1**	***Developmental / Reproductive Toxicity***: CA Prop 65 EU – GHS (H360F) ***Endocrine Activity***: EU – SVHC Candidate List EU – SVHC Prioritisation List	***Developmental / Reproductive Toxicity***: MAK Pregnancy Risk (C) GHS – KR, JP, AU, NZ ***Endocrine Activity***: TEDX – Potential ED EU – Priority ED ***Aquatic Toxicity***: GHS – JP, NZ (H401, 9.1D)	CSPA – CHCC Reporting List RCW 70A.430 Restricted in sports bottles and in children's cups RCW 70A.335

Bisphenol F

- Scored as **BM-1** in a GreenScreen® assessment (ToxServices, 2019).
- Scores as high hazard for developmental toxicity, reproductive toxicity, endocrine activity, and acute and chronic aquatic toxicity among others.
- Example of a **regrettable substitution**.
- Does not meet our minimum criteria.

CASRN	Common name	GreenScreen ® score	Authoritative lists	Screening lists	Existing WA regulations
620-92-8	Bisphenol F	**BM-1**	N/A	***Endocrine Activity***: TEDX – Potential ED ChemSec – SIN List	CSPA – CHCC List, Required Reporting

Other data rich bisphenols

Additional data rich bisphenols score as GreenScreen® **BM-1**:

- **Bisphenol S** (CASRN: 80-09-1, ToxServices, 2016)
  - Scores high for reproductive toxicity, endocrine activity, and chronic aquatic toxicity.
  - Included on the WA Chemicals of High Concern to Children reporting list.
- **Bisphenol AF** (CASRN: 1478-61-1, ToxServices, 2019)
  - Scores as high for reproductive toxicity, endocrine activity, and acute aquatic toxicity.
  - Scores as very high for chronic aquatic toxicity and persistence.
- **Tetrabromobisphenol A** (CASRN: 79-94-7, Rosenblum, 2014)
  - Present on authoritative lists for carcinogenicity, aquatic toxicity, and persistence.
  - Included on the WA Chemicals of High Concern to Children reporting list.
  - Usage as an additive flame retardant restricted under WA Children's Safe Product Act.

Other bisphenols in the priority chemical class

- Some bisphenols do not have robust hazard assessments, but will be treated as potentially hazardous:
  - Bisphenol B
  - Bisphenol Z
  - Bisphenol C
  - Bisphenol E
  - Tetramethyl bisphenol A
  - Tetrachloro bisphenol A
- Tetramethyl bisphenol F scored as GreenScreen® Benchmark-2 (ToxServices, 2020).
- TMBPF-based epoxy scored as GreenScreen® Benchmark-3 (ToxServices, 2021).
  - Sherwin-Williams V70Q11AA.
  - Cradle to Cradle Certified™ Platinum Material Health Certificate.
  - We're still evaluating.

Conclusion: Hazards of bisphenols

- **Bisphenols as a class do not meet our minimum criteria for safer.**
- Data rich bisphenols used in food and drink can linings score as **Benchmark-1** chemicals and are present on authoritative and screening lists for multiple endpoints.
- Chemical alternatives will need to meet our minimum criteria to be identified as safer.
- Hazards of TMBPF appear to be different than other bisphenols.
  - TMBPF-based linings may be a safer alternative—still evaluating.

Cradle to Cradle Certified™ and our criteria for safer

- Cradle to Cradle Certified™ Gold and Platinum Material Health Certificate products
  - Meet our minimum criteria for safer—in most instances.
- Criteria transparency
  - Published, publicly available criteria—Cradle to Cradle™ Certified Product Standard (v3.1).
- Ingredient disclosure
  - All intentionally added chemicals are assessed.
  - Impurities and breakdown products assessed at greater than 100 ppm.
  - Residual monomers assessed at greater than 1,000 ppm.
- Hazard criteria and data requirements
  - All chemicals score as “yellow” or “green” for carcinogenicity, mutagenicity/genotoxicity, reproductive and developmental toxicity, and endocrine activity.
  - More documentation of persistence and bioaccumulation may be necessary.

Bisphenols in can linings

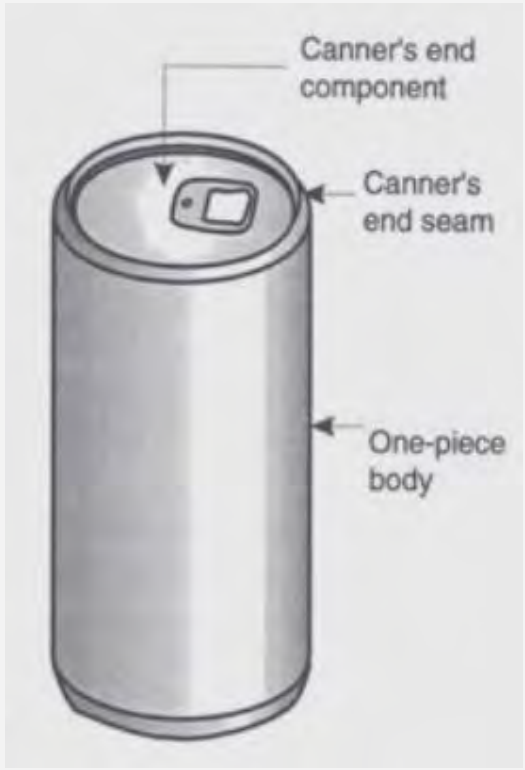
- Bisphenols are used to make epoxy polymers, which can then coat metal used in food and drink cans.
- For the purposes of this assessment, we are only interested in linings that contact food and drink (not external linings).
- Can linings slow interactions between food or drink and the can's metal.

Source: Home Science Youtube

Types of food and drink cans

- Food cans
  - 2 piece cans
  - 3 piece cans
  - Monobloc aerosol cans
- Beverage cans
  - 2 piece cans
  - Aluminum bottles

3 piece can



2 piece can

Source: Sunswell Packaging

Safer alternatives to bisphenols in can linings

Cradle to Cradle™ Certified Material Health Certificate can linings:

- **Beverage can bodies**
  - Acrylic: PPG2012-820C (C2CC Gold)
  - Polyolefin: Metpod 100 (C2CC Platinum)
  - Epoxy: Sherwin Williams V70Q11AA, V70Q25AA/AC, V70Q38AA (C2CC Platinum [*Contains TMBPF])
- **Beverage can lids**
  - Epoxy: Sherwin-Williams: V71Q02AB-11 (C2CC Platinum [*Contains TMBPF])
  - Acrylic: PPG2489-814A (C2CC Bronze—Does not meet our minimum criteria)
- **Food can bodies and lids**
  - No safer certified products identified.
- **Monobloc aerosol cans**
  - No safer certified products identified.

Feasible and available: Cradle to Cradle™ Certified linings

- Safer beverage certified products are currently in use:
  - Sodas
  - Beers
  - Juices
  - Energy Drinks
  - Aluminum cans and aluminum bottles

Future steps

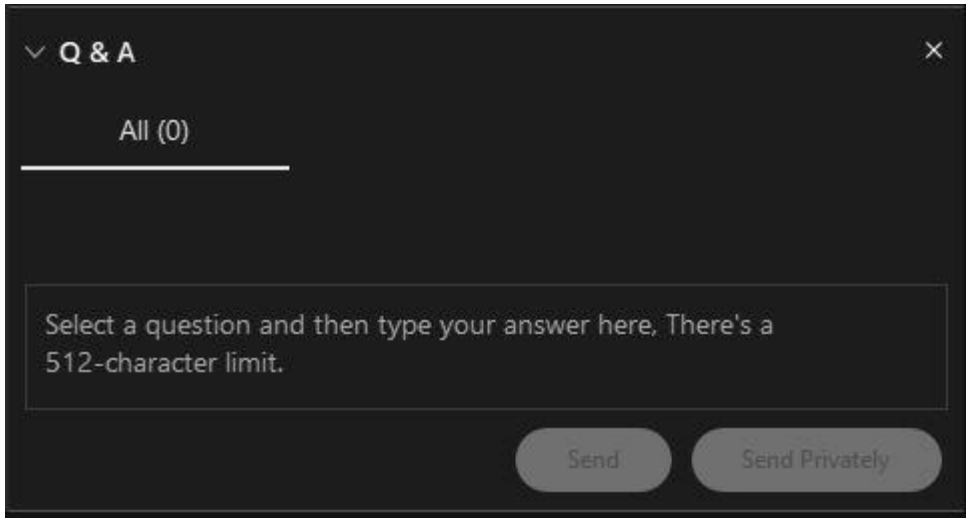
- Beverage cans
  - Safer linings identified for body.
  - Possible for lids (pending TMBPF determination).
  - Meet the requirements for a restriction.
- Food cans
  - CMI detected BPA in 2 of 234 samples, both imported.
  - No safer alternatives identified.
- Monobloc aerosol cans
  - No information identified.
- Similar use argument
  - Different formulations for different applications with different certification levels—means different uses may not be safer, even with similar chemistry.

Section 3. Food and drink cans discussion

Questions? Input to share?

Type in the Q & A box or raise your hand to unmute.

- Direct your question to everyone using the drop down arrow.
- If you need more than 512 characters, ask your question or give your input verbally.
- Raise your hand and we will unmute you to give your input.
  - If you're dialing in via phone, dial *3 to raise your hand.



Food and drink cans

Feedback category	Feedback from stakeholders during the July 13 discussion
Analysis process	• Eden used oleoresin when they switched from bean to tomato cans. • Using the similar use argument is a rational way to ensure we can apply the ban more broadly to cans.
Performance and availability of alternatives	• If an aerosol can liner formulation is the same as another can lining product, could be feasible and available. • Go broader on alternatives—items used in the past and items that are used in other industries, such as the medical industry. The whole point of this law is to get us to have BPA-free materials. • Look more at similar uses.
Other feedback	• Can alternatives be either glass liners or going back to jars and bottles? • Not good enough! I don't like the idea of Benchmark-2 chemicals in my food cans. • Need to educate the public about BPA in cans so consumers can make different choices. • The discussion of switching to glass gets into challenging, value-laden trade-offs between climate hazards and chemical health hazards. • The increased move to plastic is continuing our reliance on natural gas. We have to consider better materials like glass. This is about other safer alternatives so a ban can be put into place, not what are all the alternatives out there and how do we regulate them. • Every day we're being exposed to hormone-disrupting chemicals in these products, and vulnerable populations are exposed at a higher rate due to their consumption.* • Reusable bottles are stainless steel, probably prohibitively expensive for a single-use container. • People pay more for organic food, why not stainless steel cans?

*Multiple stakeholders shared the same feedback.

Get involved with our Phase 3 process

- Share your input on the working draft criteria for safer, feasible, and available.
- Don’t miss product-specific webinars this summer.
- Invite us to present to your group.
- Reach out to us to set up a meeting with our team.

Stakeholder involvement next steps

- Make sure you are on our email list!
- Product-specific webinars continuing this summer.
- Formal public comment period on draft regulatory actions report (Fall 2021 – Winter 2022).

Where are we at on the other products?

Priority product	Priority chemical class	Status	Webinar target
Can linings	Bisphenols	Evaluating C2CC™ beverage can linings for safer, feasible, and available, looking for food can alternatives	Update at 12pm
Aftermarket treatments	PFAS	Evaluating Safer Choice carpet care products, identified other PFAS-free alternatives, working with manufacturers to evaluate safer	July 27, 9:30 a.m. PST
Personal care and beauty products	Phthalates	Identified dipropylene glycol as safer, feasible, and available, evaluating benzyl alcohol and alternatives on the Safer Chemical Ingredients List	July 27, 12 p.m. PST
Furniture and furnishings	PFAS	Looking for alternative ways to increase cleanability. Identified untreated fabric, inherently stain resistant fabric, wipeable fabric, and washable covers as potential alternatives.	Update Late-Summer

Have ideas or input on any of these products? Please reach out! We'd love to hear from you!

Where are we at on the other products?

Priority product	Priority chemical class	Status	Webinar target
Carpets and rugs	PFAS	Evaluating C2CC™ products and non-chemical alternatives	Late-Summer
Vinyl flooring	Phthalates	Ordered data from manufacturers, evaluating alternative plasticizers	Late-Summer
Printing inks	PCBs	Conducting product testing study, working on identifying inks with lower PCB concentrations	Late-Summer
Electric and electronic products	Flame retardants	Conducting product testing study, evaluating alternatives listed on TCO's positive list (GreenScreen® BM-2 or higher)	Late-Summer

Have ideas or input on any of these products? Please reach out! We'd love to hear from you!

Thank you for joining us!

SaferProductsWA@ecy.wa.gov

ecology.wa.gov/Safer-Products-WA

bit.ly/SaferProductsWA (Find links to everything here!)

Chapter 70A.350 RCW (formerly 70.365)

DEPARTMENT OF ECOLOGY State of Washington

Washington State Department of Health

End of presentation.

Safer Products for WA Implementation Process

The implementation process for Safer Products for Washington involves **four major phases**.

1. **Phase 1**. May 8, 2019: What chemicals are we most concerned about?
   - The first five priority chemical classes are PFAS, PCBs, phthalates, phenols, and flame retardants.
2. **Phase 2**. June 1, 2020: What consumer products contain these chemicals?
   - This phase identifies priority consumer products that are significant sources of exposure to people and the environment.
3. **Phase 3**. June 1, 2022: Do we need to regulate when these chemicals are used?
   - This phase determines regulatory actions—whether to require notice, restrict/prohibit, or take no action.
4. **Phase 4**. June 1, 2023: What rules do we need to keep people and the environment safe?
   - This phase includes restrictions on the use of chemicals in products or reporting requirements. Restrictions take effect one year after rule adoption.

After these four phases are completed, the **5-year cycle repeats**, and we return to Phase 1 to identify a new set of priority chemical classes.

Process for identifying feasible and available alternatives

- **Step 1**: Identify the performance requirements of the priority product at the chemical, material, product, and process level.
- **Step 2**: Is the priority chemical necessary for the performance of the product?
  - If yes, move to Step 3.
  - If no, is it possible to meet the performance requirements of the product without the priority chemical?
    - If yes, the alternative is feasible, and we move to Step 5 to assess availability.
    - If no, the alternative is not feasible.
- **Step 3**: Is the alternative already used or marketed for the application of interest or a similar application?
  - If yes, the alternative is feasible, and we move to Step 5 to assess availability.
  - If no, move to Step 4.
- (Continued on next slide.)

Continued: Identifying feasible and available alternatives

- **Step 4**: Have others identified it as a favorable alternative for this or similar applications?
  - If yes, the alternative is feasible, and we move to Step 5 to assess availability.
  - If no, the alternative is not feasible.
- **Step 5**: Is the alternative currently used for the application of interest?
  - If yes, the alternative is available.
  - If no, we move to the second part of Step 5.
- **Step 5 (second part)**: Is the alternative currently offered for sale for the application of interest? Is the price of the alternative close to the current?
  - If yes to both, the alternative is available.
  - If no (to one or both), the alternative is not available.