

The webinar will begin shortly.

Safer Products for Washington: Leather and textile furnishings (9:30 a.m.) Laundry detergents (12 p.m.)

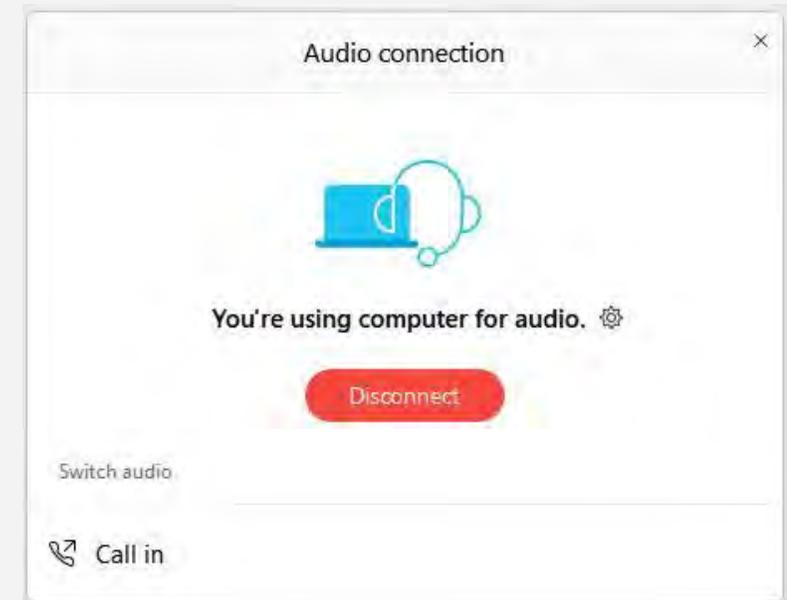
Implementing RCW 70A.350: The Pollution Prevention for Healthy People and Puget Sound Act

MAY 18, 2021



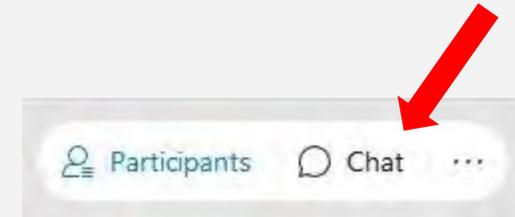
Audio connection logistics

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- 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: Leather and textile furnishings

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—Leather and textile furnishings
3. 10:20—Questions and discussion on leather and textile furnishings
4. 11:30—Break
5. 12:00—Recap: Safer Products for Washington background
6. 12:10—Laundry detergent
7. 12:50—Questions and discussion on laundry detergent
8. 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.
 - Consider and use information in specific ways.
 - Enact rulemaking (if needed).
- Safer Products for Washington is the implementation program for RCW 70A.350.

Safer Products for WA Implementation Process



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
Phthalates	Personal care products



Regulatory determinations

- In order to restrict the use of a priority chemical, **safer** alternatives must be **feasible** and **available**.
 - The restriction must:
 - Reduce a significant source or use of priority chemical(s).
- OR**
- Be necessary to protect sensitive species or sensitive populations.



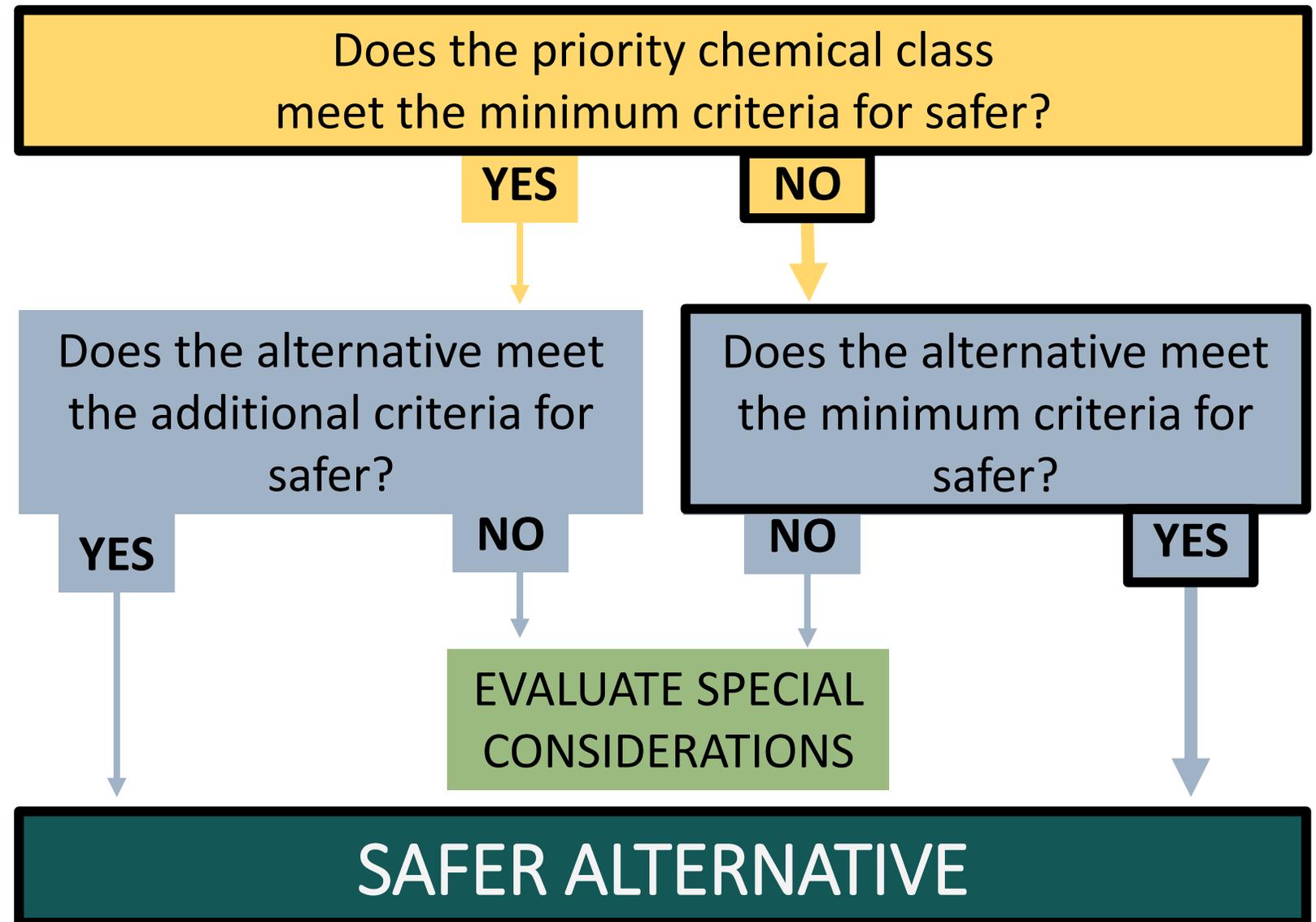
Safer in the law

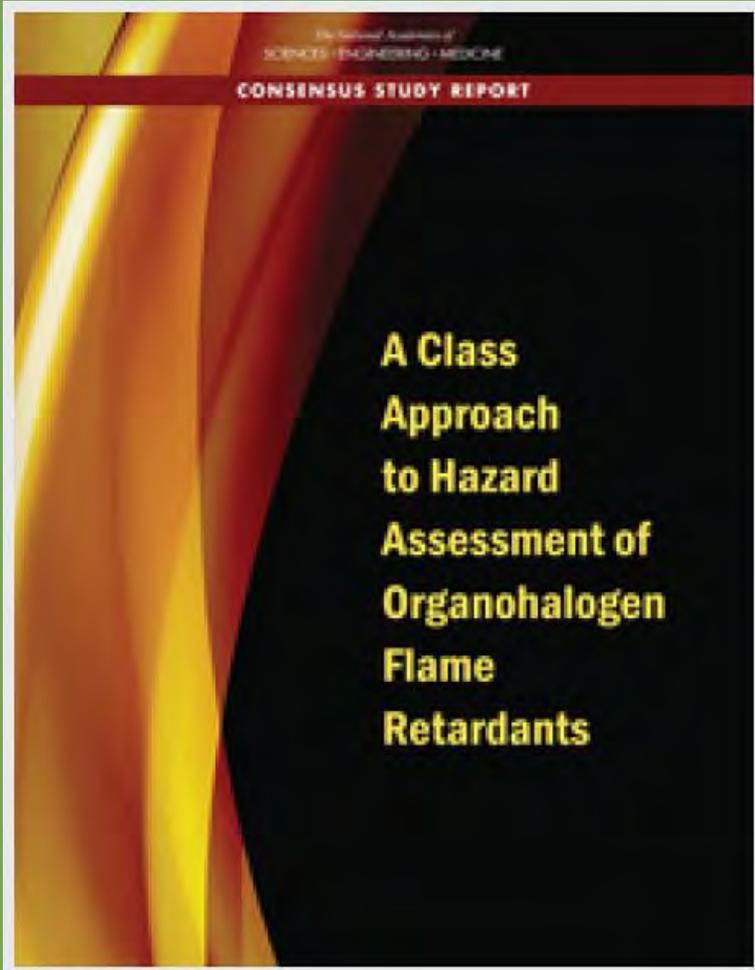
- Safer is defined in the law as “less hazardous to humans or the environment than the existing chemical or process.”
- A safer alternative to a particular chemical may include:
 - A chemical substitute.
 - A change in materials or design that eliminates the need for a chemical alternative.



Criteria for safer is a *spectrum*

Process for identifying safer alternatives





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.

Minimum criteria for safer

- Chemicals used to function like priority chemicals cannot have:
 - High concerns for carcinogenicity, mutagenicity, reproductive or developmental toxicity, or endocrine disruption.
 - High toxicity in other ways and very persistent and/or very bioaccumulative.
 - Very high persistence and very high bioaccumulation.
- For a full description—see the working draft criteria.

Certifications and assessments that meet our minimum criteria for safer

Examples of chemicals that meet this criteria:

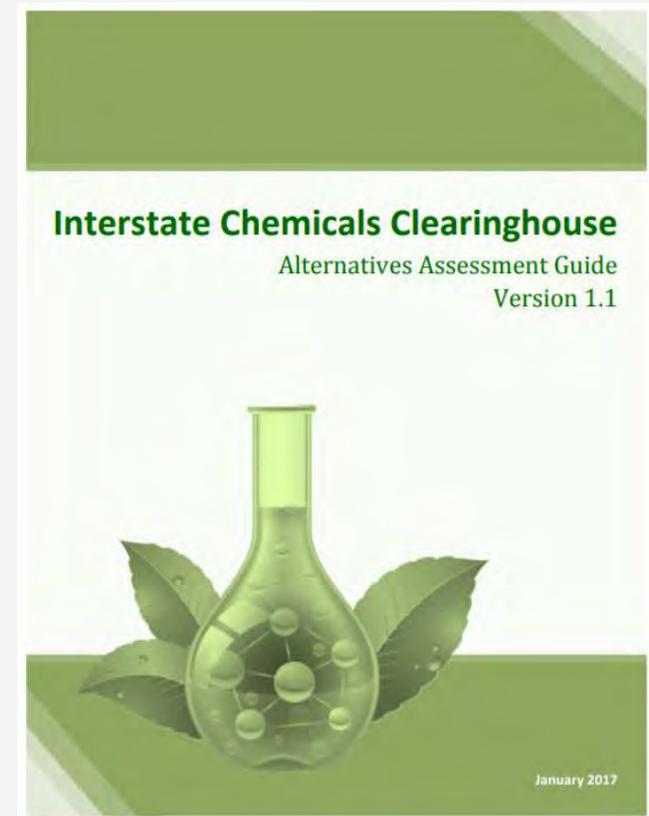
- GreenScreen® Benchmark 2, 3, and 4.
- EPA Safer Chemical Ingredients List evaluated against the master criteria.

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

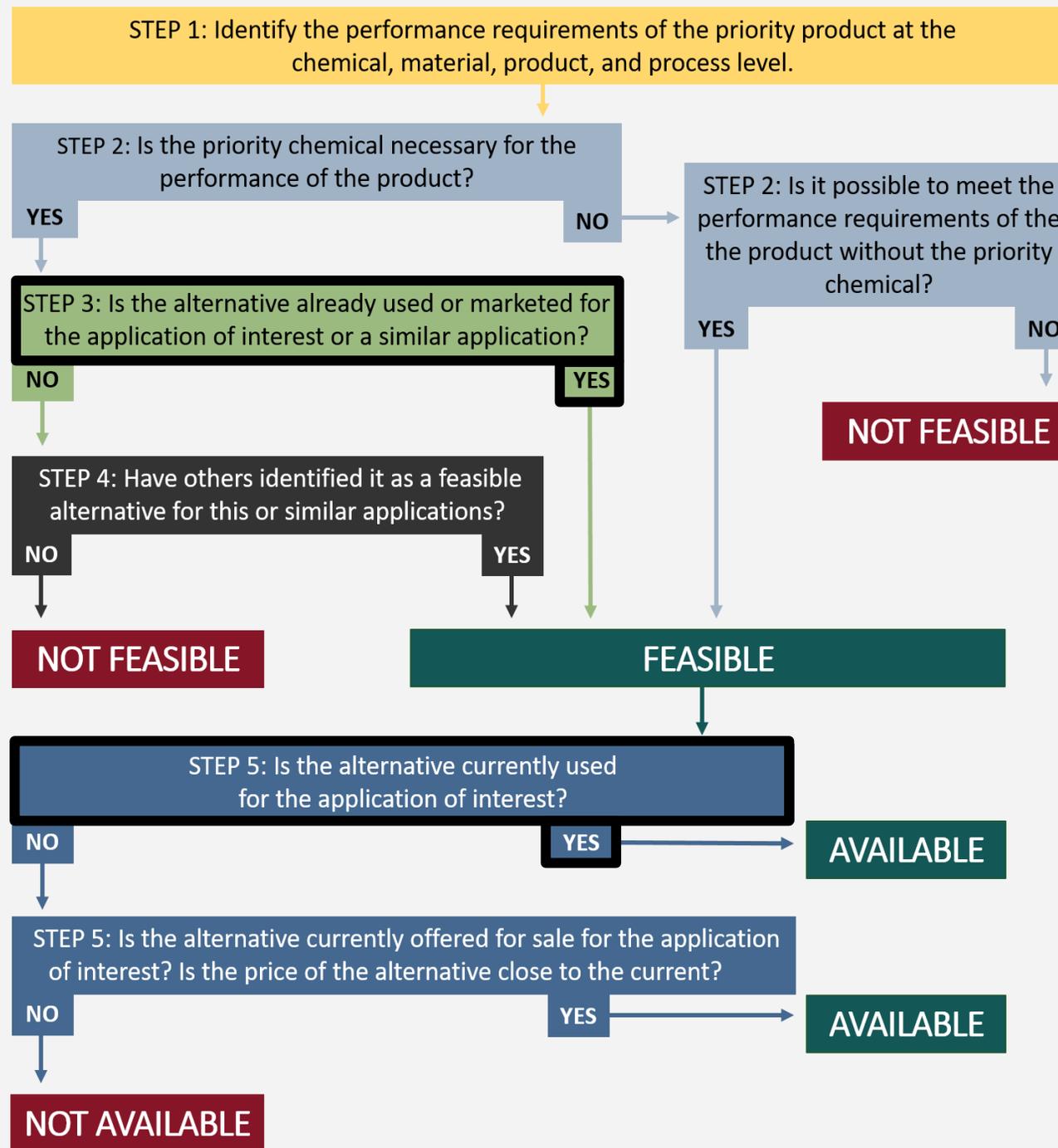
- GreenScreen Certified™ Gold, Gold+, and Platinum Products*
 - *Certification levels depends on product type.
- EPA Safer Choice Products
- Cradle to Cradle Certified™ Gold and Platinum Material Health Certificate products
 - More documentation of persistence and bioaccumulation may be necessary.

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.
- IC2 created a guide for Alternatives Assessment (2017).
 - Modules to assess potential alternatives.
 - Performance module—technical feasibility.
 - Cost and availability module—price competitive and available in sufficient quantity.



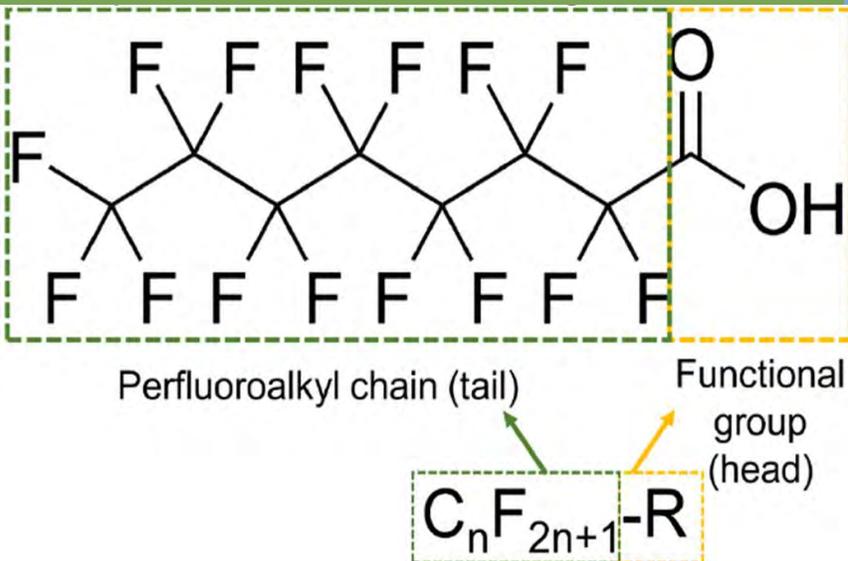
Process for identifying feasible and available alternatives





Section 2. Leather and textile furnishings

Scope of the priority chemical class



Perfluororalkyl acid (PFAA)
example structure
(Blake and Fenton, 2020).

- RCW 70A.350.010 defines “perfluoroalkyl and polyfluoroalkyl substances” or “PFAS chemicals” as **a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.**
- Carbon-fluorine bond defines the class—hard to break, causing PFAS to be very highly persistent.
- Accumulate overtime, increasing exposure to sensitive populations and species.
- Voluntary agreements to phase out PFAS and restrictions on the use of some PFAS have led to regrettable substitutions.



The priority product category

- Indoor and outdoor leather and textile furnishings used in residential and commercial settings include:
 - Table linens.
 - Bedding.
 - Upholstered furniture.
 - Cushions and pillows.
 - Curtains, drapes, and awnings.
 - Towels.



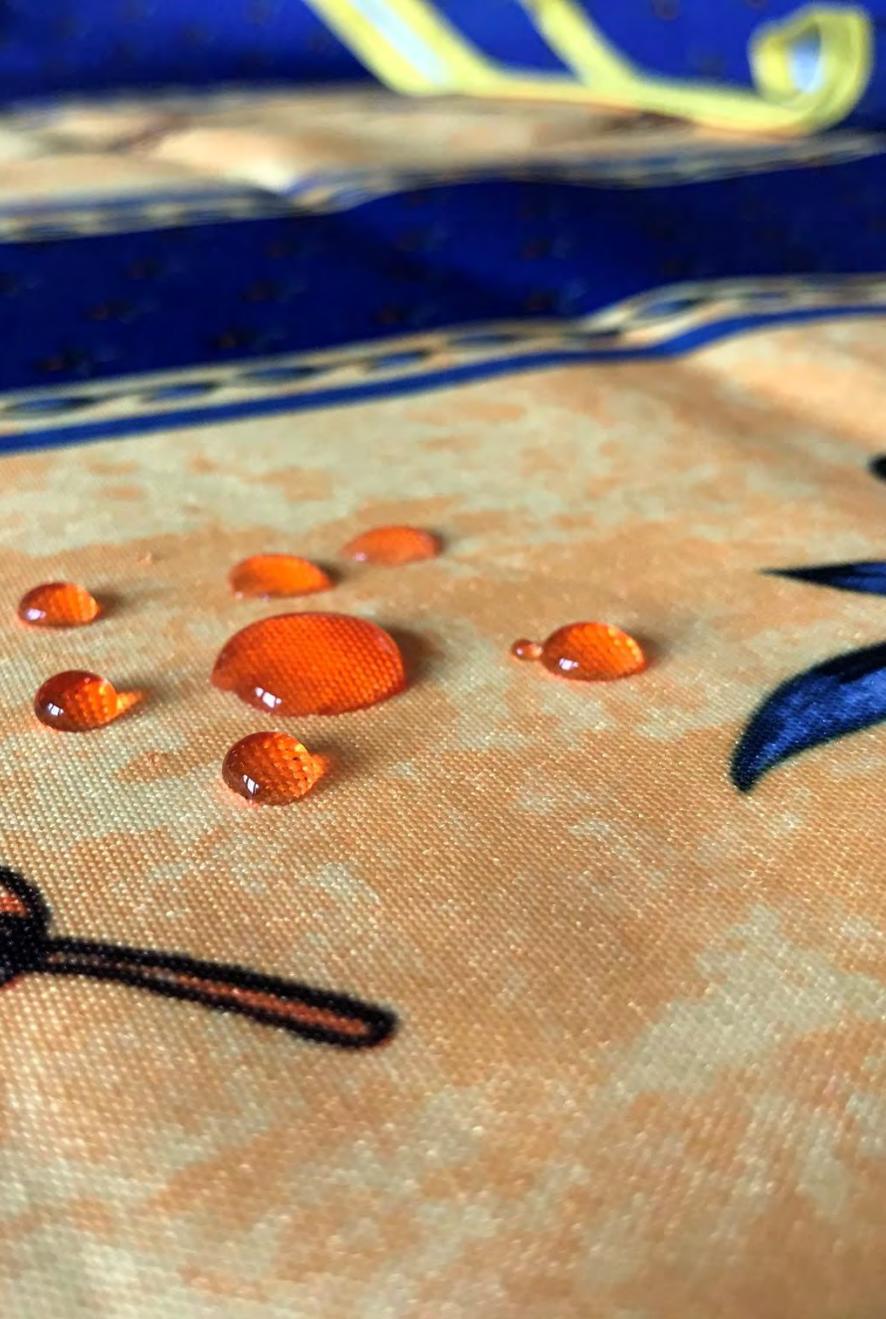
PFAS in furnishings

- Applied to leather and textile furnishings during the manufacturing process.
- Used for stain, oil, and water resistance.
- Side-chain fluorinated polymers are the most common PFAS used in leather and textile furnishings.
- Can degrade under normal wear and tear.
- Release fluorinated side-chains which degrade to PFAAs.



Furnishings are a significant source of PFAS

- Furnishings have the **potential to expose** people to PFAS.
- Furnishings contribute to the **volume** of PFAS in our homes and environment.
- A restriction on PFAS in leather and textile furnishings would reduce a significant source of PFAS to our homes and the environment.
- Full rationale in 2020 priority products report to the Legislature.



Hazards of PFAS

- All PFAS are persistent or break down to persistent PFAS.
- Many are also bioaccumulative.
- Many have reproductive and developmental toxicity and/or systemic toxicity (including immunotoxicity, neurotoxicity, and thyroid).
- Some are also toxic to aquatic organisms.

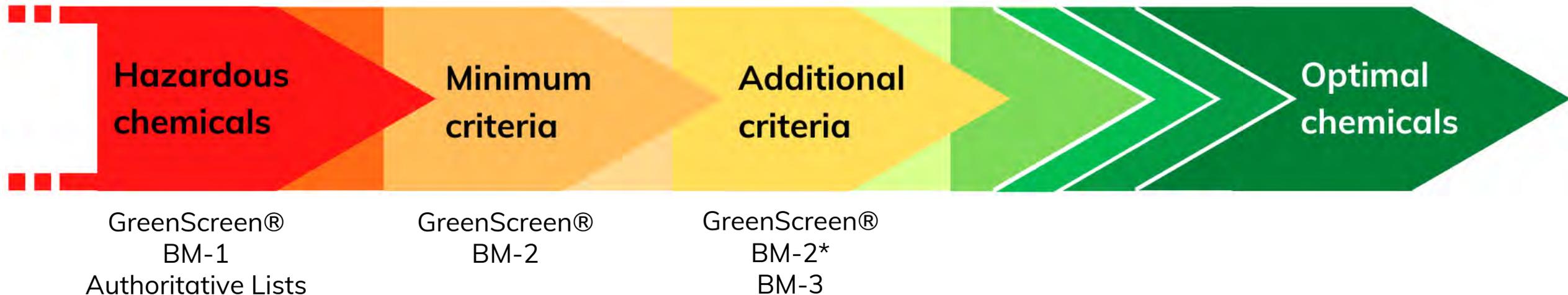


PFAS regulation in WA

- As a class, in some **food packaging** applications (RCW 70A.222) and **firefighting foam** (RCW 70A.400).
- WAC 171-333-310 lists PFOS and its salts as **persistent, bioaccumulative, toxic** chemicals.
- WAC 173-334-130 identifies PFOS and PFOA as **chemicals of high concern to children**.

Identifying data rich chemicals

- We identified data rich chemicals by looking for existing hazard assessments
 - GreenScreen® and Authoritative Listings
 - GreenScreens—conducted by a licensed profiler, publicly available.
 - Authoritative Listings—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 15 data rich PFAS present on authoritative lists or with GreenScreen® assessments.



**not all BM-2 meet additional criteria*

Criteria for safer is a spectrum

Hazards of data rich chemicals

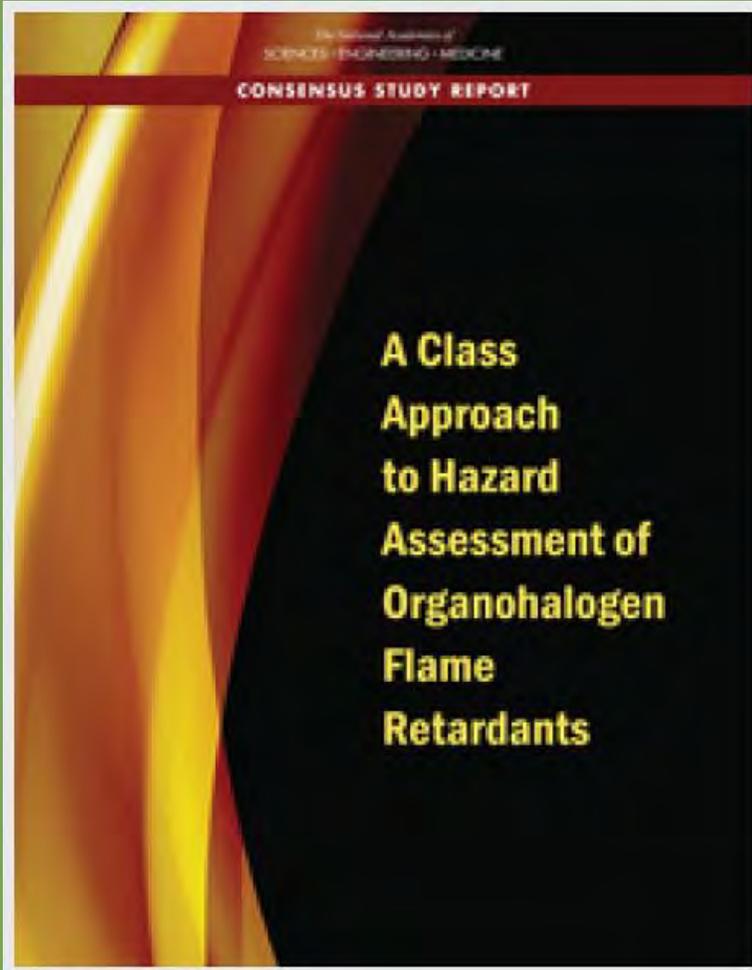
CAS	Common name	Hazards	Example authoritative lists
335-67-1	Perfluorooctanoic acid (C8)	Developmental toxicity, systemic toxicity, PBT	Cal EPA Prop 65, EU GHS (H360D, H362, H372), UNEP Stockholm Conv.—Persistent Organic Pollutants (Proposed PBT)
375-95-1	Perfluorononanoic acid (C9)	Reproductive and Developmental toxicity, PBT	EU GHS (H362 , H360f), EU Annex VI CMRs (Category 1B), EU SVHC Authorisation List PBT Candidate
1763-23-1	Perfluorooctanesulfonic acid (C8)	Reproductive and developmental toxicity, PBT	Cal EPA Prop 65, EU Annex VI CMR (Category 1B), UNEP Stockholm Conv.—Persistent Organic Pollutants (PBT)
3825-26-1	Ammonium perfluorooctanoate (C8)	Reproductive and developmental toxicity	EU GHS (H360D, H362), EU Annex VI (CMR Category 1B)
2795-39-3	Potassium perfluorooctanesulfonate	Reproductive and developmental toxicity, PBT	EU GHS (H360D, H362), EU Annex VI CMR (Category 1B), OSPAR PBT
29081-56-9	Ammonium perfluorooctanesulfonate (C8)	Reproductive and developmental toxicity, PBT	EU GHS (H360D), EU Annex VI CMR (Category 1B), OSPAR PBT
116-14-3	Tetrafluoroethylene	Carcinogenicity	Cal EPA Prop 65, IARC Group 2A, MAK Group 2, NIH (report on carcinogens—reasonably anticipated to be carcinogenic)

Hazards of data rich chemicals

Associated CAS#(s)	Common name	GreenScreen® score	Endpoints of concern (H or vH)
116-15-4	Hexafluoropropylene	BM-1	Carcinogenicity , neurotoxicity (single), systemic toxicity (single and repeat), skin and eye irritation, and persistence
86508-42-1	Perfluorocarbon compounds	BM-1	Persistence and bioaccumulation
297730-93-9	3-Ethoxyperfluoro(2-methylhexane)	BM-1	Persistence , bioaccumulation , and chronic aquatic toxicity
29420-49-3	Perfluorobutanesulfonate, potassium salt	BM-1	Persistence , eye irritation
27905-45-9	1,1,2,2-Tetrahydroperfluorodecyl acrylate	BM-1	Persistence , bioaccumulation , neurotoxicity (repeat), and systemic toxicity (repeat)
9002-84-0	Polytef	BM-1	Persistence , systemic toxicity
307-24-4	Perfluorohexanoic acid	BM-1	Persistence , skin and eye irritation, and systemic toxicity (single)
647-42-7	2- Perfluorohexylethanol	BM-1	Acute toxicity, systemic toxicity (single and repeat), aquatic toxicity (acute and chronic), and persistence



Criteria for safer is a *spectrum*



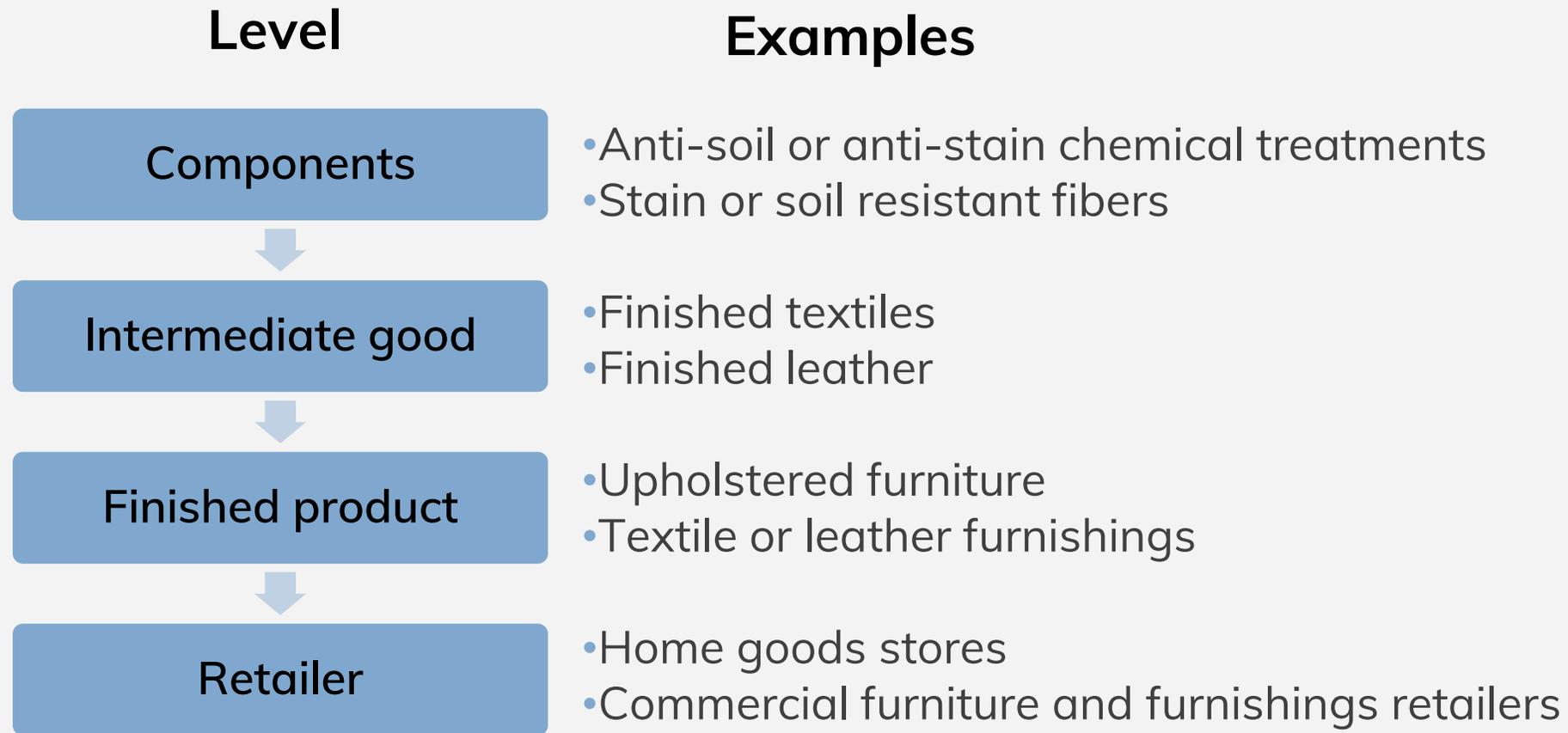
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Conclusion on the hazards of PFAS

- **PFAS as a class do not meet our minimum criteria for safer.**
- None of the data rich PFAS identified meet our minimum criteria for safer.
 - PFAS with assessments were Benchmark 1 chemicals.
 - Other PFAS were found on authoritative lists that do not meet our minimum criteria for safer.

Considering alternatives at multiple supply chain levels



Ease of identification of safer, feasible, and available

Level	Safer	Feasible	Available
Components	Easier	Less difficult	Difficult
Intermediate products	Easier	Easier	Less difficult
Finished products	Easier	Easier	Easier
Retailers	Difficult	Easier	Easier



Safer—what are we looking for?

Chemical treatments or fibers that serve the function of PFAS and meet our minimum criteria for safer

Where can we start?

- GreenScreen® Benchmark 2, 3, or 4 chemicals.
- Cradle to Cradle Certified™ Products with material health certificates:
 - Silver (possibly)
 - Gold (likely)
 - Platinum (likely)
- EPA Safer Choice Products (likely).
- EPA Safer Chemical Ingredients List (likely).
- Exploring Scivera and ChemForward.



Components that may be safer

- Several PFAS-free chemical treatments are available
 - Siloxane-based, wax-based or fatty acid derived treatments identified—exact formulations unknown.
 - Nanomaterial treatments identified but likely not safer.
- Safer status of chemical treatments unknown, need access to confidential information to assess.

Intermediate products that may be safer

- C2CC™ Products with gold or platinum material health certificates
 - Carnegie Xorel polyethylene—company does not apply additional anti-soil or anti-stain treatments.
 - Quantum group high-performance polymer textiles—use of treatments unknown.
- C2CC™ Products with silver material health certificates
 - Gaja Wool upholstery fabric—company recommends not using anti-soil or anti-stain treatments.
- Additional PFAS-free textiles identified—safer status is unknown.

This does not constitute or imply endorsement, recommendation, or preference by the Washington State Department of Ecology.



Finished products that may be safer

- C2CC™ Products with silver material health certificates
 - Steelcase: office furniture—use of treatments unknown.
 - Herman Miller: office furniture (not upholstered).
 - Loll Design: outdoor furniture (not upholstered).
- Additional PFAS-free furniture and furnishings identified—safer status is unknown.

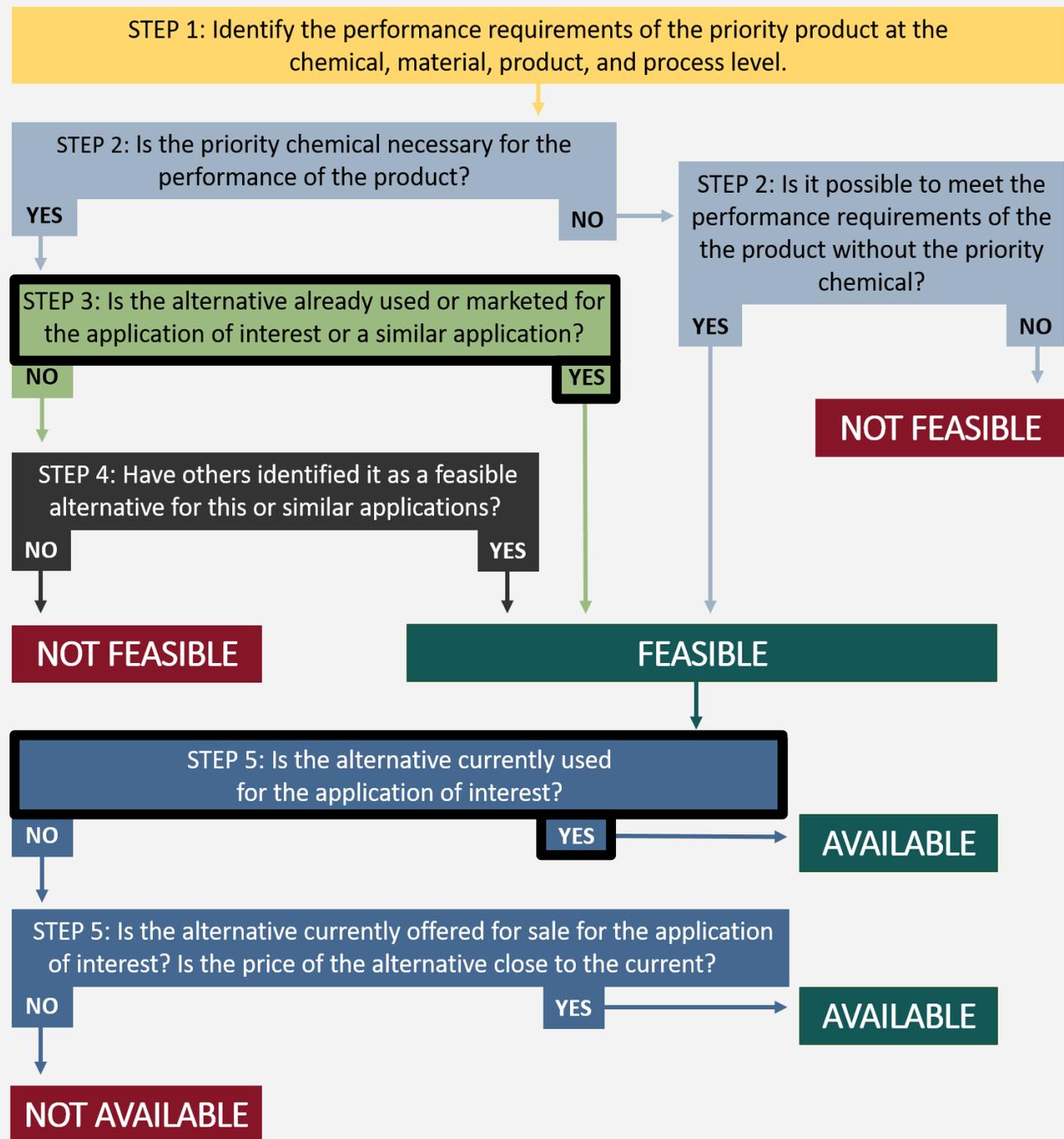
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Summary of safer

Supply chain level	Are there safer options?
Components	More info needed
Intermediate goods	C2CC™ certifications – limited products
Finished products (furniture and furnishings)	C2CC™ certifications – limited products
Retailers	More info needed

- Identified intermediate and finished products that are CTCC™ Silver or higher.
 - Many do not use any anti-soil or anti-stain treatments.
- Identified several components and intermediate and finished products that are likely PFAS-free, but safer status is unknown.
- No treated leather currently identified.

Reminder- process for identifying feasible and available alternatives





Feasible and available—what are we looking for?

Products that are used by consumers and can replace furniture and furnishings that were treated with PFAS

Where can we start?

- Products that are safer and/or PFAS-free:
 - Finished furniture.
 - Textile and leather furnishings.
 - Fabrics and leathers used in interior design.
- Products sold by retailers with PFAS-free commitments.
- Product lists generated through certain initiatives.

Safer products that are likely available

- C2CC™ finished products with silver material health certificates
 - Steelcase: office furniture
 - Herman Miller: office furniture
 - Loll Design: outdoor furniture (not upholstered)
 - Need to confirm feasibility—are they sold in the same applications as products that are treated with PFAS?
- C2CC™ intermediate products with silver, gold, or platinum material health certificates
 - May be feasible and available—need to confirm use in finished products.

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Retailers selling finished products

- Several retailers have committed to phasing out PFAS in their private brands:
 - Ikea
 - Many products since 2016: furniture (fabric and leather), home textiles.
 - Target
 - Focused on private brand furniture, 2022 goal
 - Office Depot
 - Office furniture only.
 - Staples
 - Office furniture only.
- Safer status of these products is unknown.

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Retailers selling finished products

- Several retailers sell products made with PFAS-free textiles:
 - Crate & Barrel
 - Pottery Barn
 - Bassett
 - Room & Board
- Safer status of these products is unknown.

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Conclusion—what we know so far

Level	Are there safer options?	Are there feasible options?	Are there available options?
Components	More info needed	More info needed	More info needed
Intermediate products	C2CC™ certifications – a few products	More info needed	More info needed
Finished products (furniture and furnishings)	C2CC™ certifications – a few products	More info needed	C2CC™ certifications – a few products
Retailers	More info needed	Yes – a few products	Yes – a few products

Conclusion—Safer, feasible, and available

What we know:

- Identified available and possibly safer office chairs and outdoor furniture.
- Some upholstery fabric and fabric upholstered products are C2CC™ certified (likely safer) and others are PFAS-free.
- Several companies sell PFAS-free furniture and furnishings.

What we don't know:

- How many of the identified PFAS-free alternatives are safer.
- Whether the likely safer alternatives provide stain/soil resistance (feasibility).
- How many likely safer alternatives are used in priority products (availability) .
- Information about safer, feasible, and available alternatives in all leather furniture and furnishings.



Help us connect the dots!

- Information about the chemicals used to replace PFAS in PFAS-free products on the market.
 - GreenScreen® assessments on chemicals used to function like PFAS.
 - C2CC™ certified products.
 - Other hazard assessments are possible—reach out to discuss!
- PFAS-free products that provide soil or stain resistance.
 - Treated leather products.
 - Residential products.

Future steps

- A restriction on the use of PFAS in furniture and furnishings would reduce a significant source of PFAS.
- Not yet able to demonstrate that safer alternatives are both feasible and available.
- Research continues, hopefully with your help!
- If we find safer, feasible, available alternatives, we could recommend a restriction.
- If we don't find safer, feasible, available alternatives, we could recommend a reporting requirement.
- Opportunities to discuss the scope.

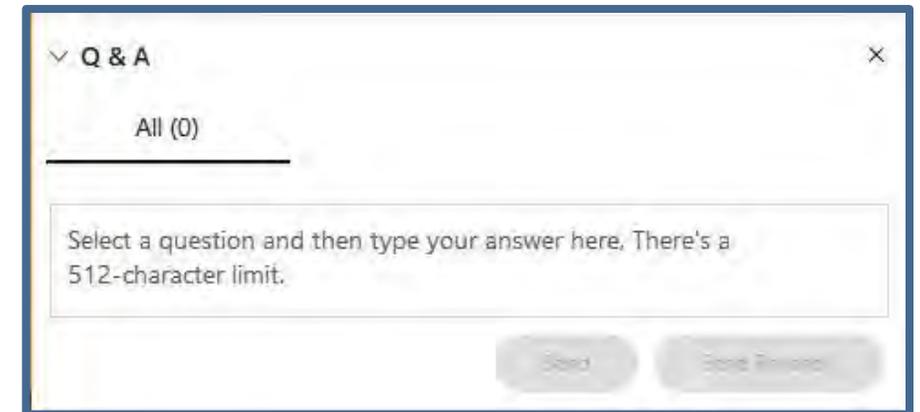


Section 3. Leather and textile furnishings discussion

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.



Leather and textile furnishings

Feedback category	Feedback from stakeholders during the May 18 discussion
Other alternatives to consider	<ul style="list-style-type: none">• Maharam makes a moisture-resistant polyester textile (source from Building Green).• ECHA report on textiles, upholstery, carpet, leather, and apparel (https://echa.europa.eu/documents/10162/13641/pfas_in_textiles_final_report_en.pdf/0a3b1c60-3427-5327-4a19-4d98ee06f041).• Non-animal leather as a potential alternative.
Performance of alternatives	<ul style="list-style-type: none">• Ecology should challenge where this function is necessary for these products. Avoidance should be an alternative.• Agency is not mandated to determine if performance is valid.• Chemical manufacturers respond to customer's performance demands.*• Relationship between customer and manufacturer is complex—public education or marketing rules can be used to help consumers understand risk associated with performance expectations.• PFAS-free alternatives are okay on “water repellency” not “stain repellency.”• Stain resistance reduces cleaning cost and lengthens service life of articles.
Availability of alternatives	<ul style="list-style-type: none">• Bed, Bath, Beyond has made a PFAS-free commitment.
Other feedback	<ul style="list-style-type: none">• Many fabrics used for upholstered office furniture are not finished with stain/soil repellent treatments (so Cradle to Cradle Certified™ does not necessarily mean it uses a PFAS-free anti-stain treatment)—should distinguish between the two.• Issues with conflict resolution in GreenScreen® process—easier to rely on authoritative sources.• Manufacturers should start reformulation now with presumption PFAS should be banned; need to reverse trend of PFAS release (example, PFAS used in furniture found in breastmilk: https://toxicfreefuture.org/100-of-breast-milk-samples-tested-positive-for-toxic-forever-chemicals/).• Ecology should work with other states that have PFAS bans to increase consistency.

*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
Laundry detergent	APEs	Update at 12pm PST	May 18
Paints	PCBs	Identified paints with lower PCB concentrations, evaluating feasible and available	June 1
Thermal paper	Bisphenols	Evaluating Pergafast™ 201 (CAS 232938-43-1) and electronic receipts as alternatives	June 1
Recreational foam	Flame retardants	Evaluating whether flame retardant free foam is feasible	Mid-Summer
Can linings	Bisphenols	Evaluating C2CC™ beverage can linings for safer, feasible, and available, looking for food can alternatives	Mid-Summer
Personal care and beauty products	Phthalates	Identified dipropylene glycol as safer, assessing feasible and available, evaluating other alternatives on the Safer Chemical Ingredients List	Mid-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
Aftermarket treatments	PFAS	Evaluating Safer Choice carpet care products, identified other PFAS-free alternatives, working with manufacturers to evaluate safer	Mid-Summer
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: Laundry detergents

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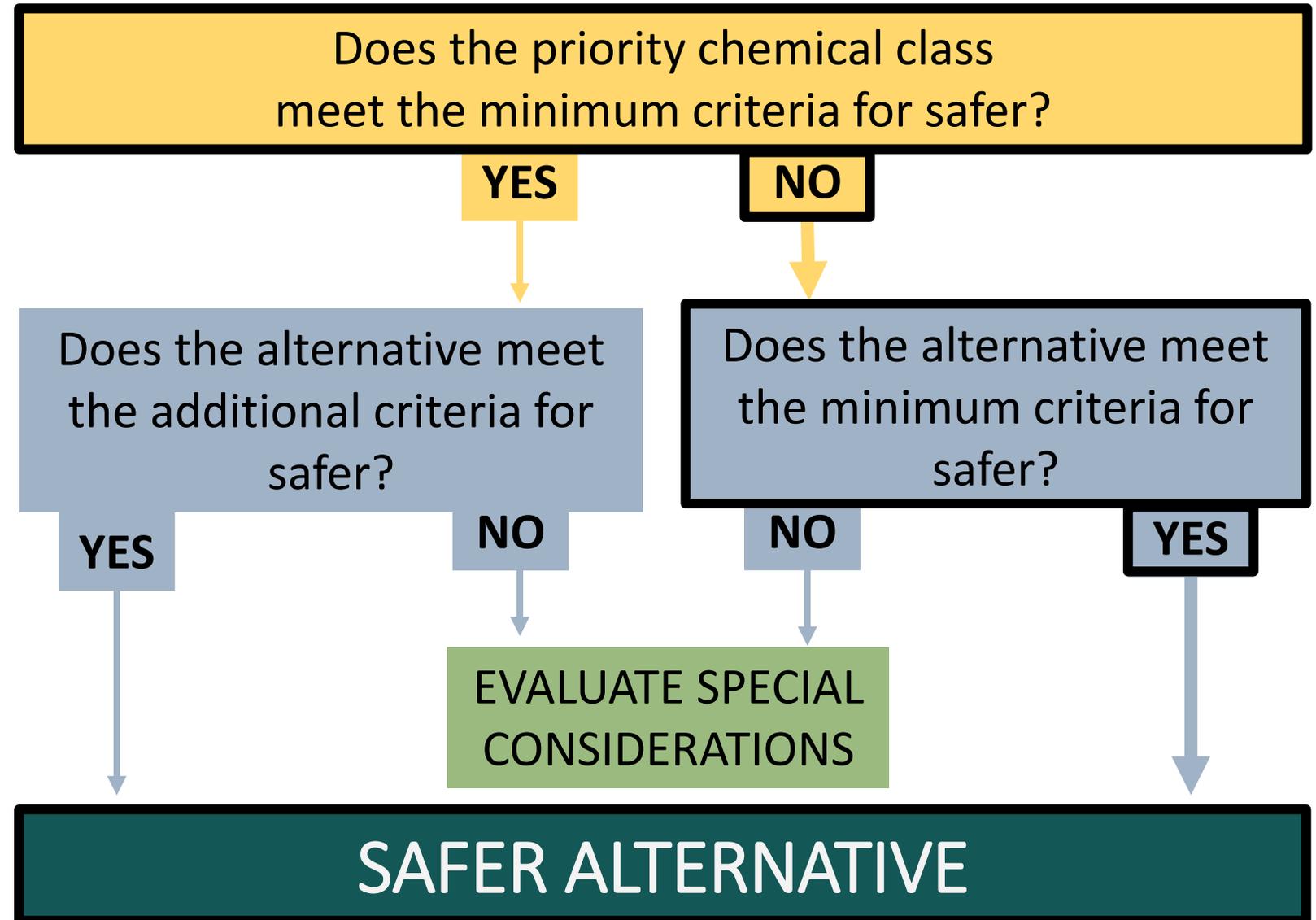
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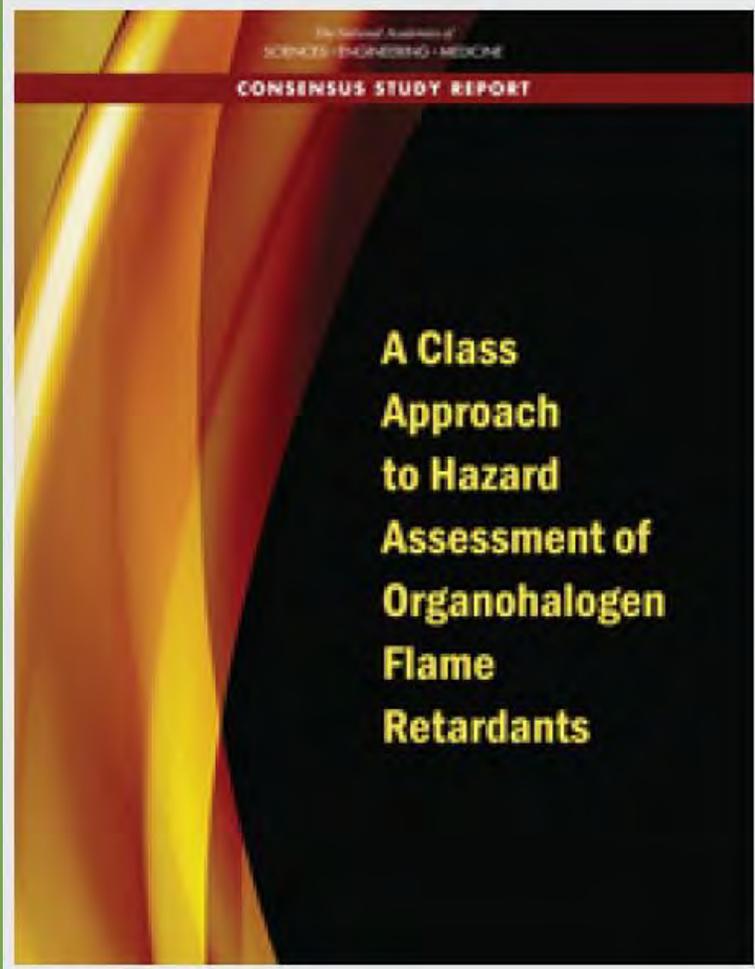
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 - Very high persistence and very high bioaccumulation.
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Certifications and assessments that meet our minimum criteria for safer

Examples of chemicals that meet this criteria:

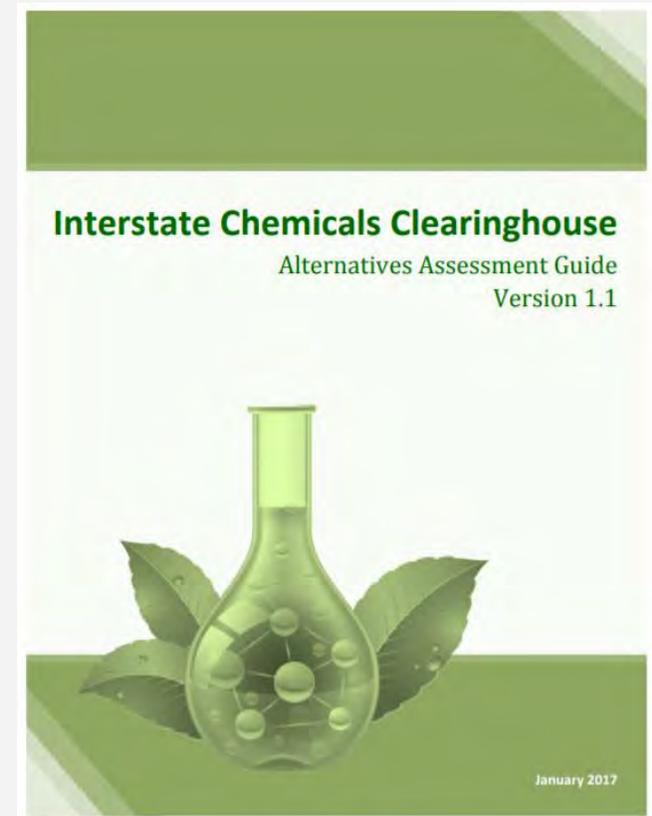
- GreenScreen® Benchmark 2, 3, and 4.
- EPA Safer Chemical Ingredients List evaluated against the master criteria.

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

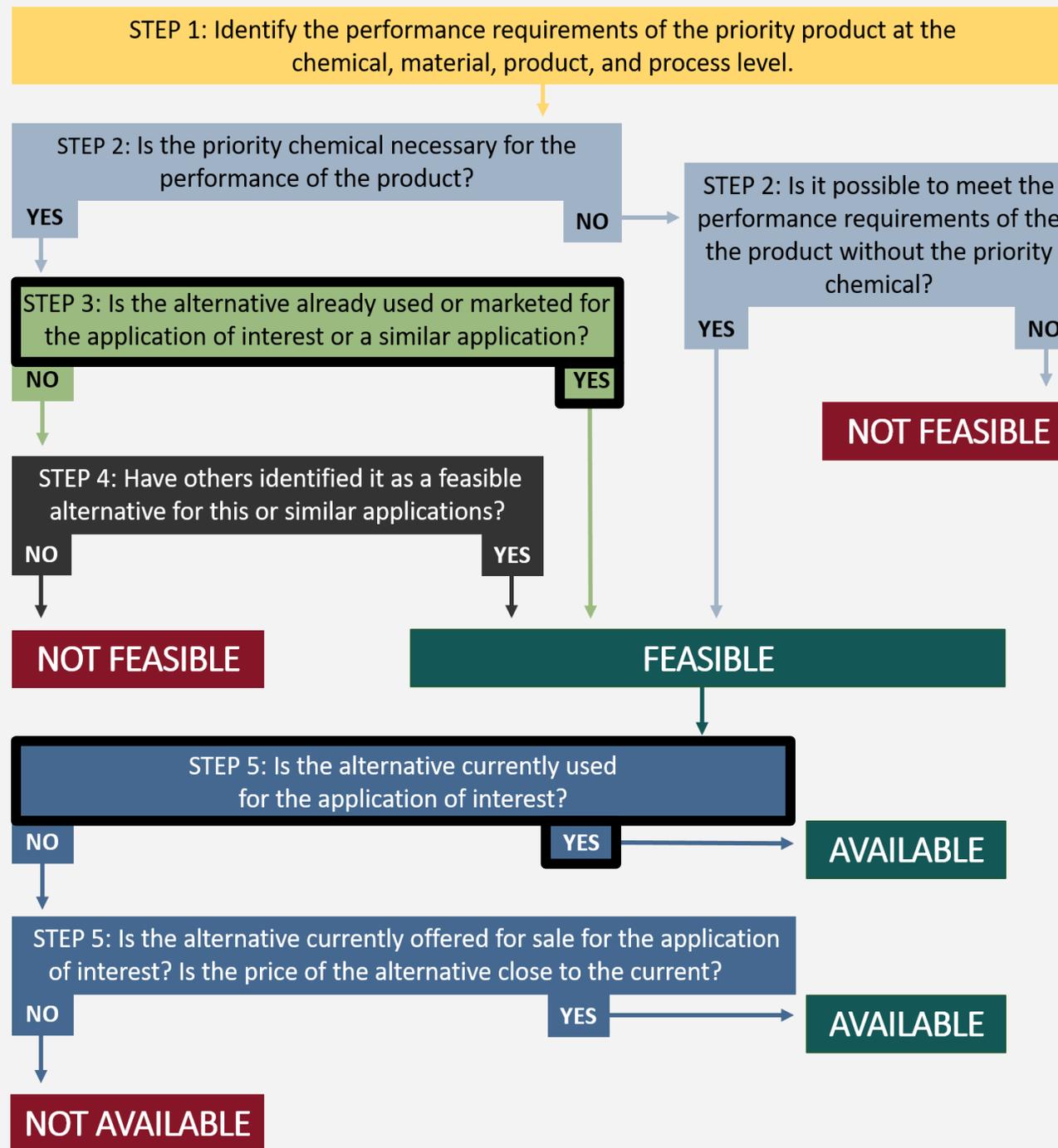
- GreenScreen Certified™ Gold, Gold+, and Platinum Products*
 - *Certification levels depends on product type.
- EPA Safer Choice Products
- Cradle to Cradle Certified™ Gold and Platinum Material Health Certificate products
 - More documentation of persistence and bioaccumulation may be necessary.

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.
- IC2 created a guide for Alternatives Assessment (2017).
 - Modules to assess potential alternatives.
 - Performance module—technical feasibility.
 - Cost and availability module—price competitive and available in sufficient quantity.



Process for identifying feasible and available alternatives





Section 2. Laundry detergent



Priority chemical & priority product

- In 2019, Legislature defined **alkylphenol ethoxylates (APEs)** as a priority chemical class.
- Identified laundry detergents as a significant source or use of APEs.
- Listed them as a priority product our 2020 report.
- Safer alternatives to APEs are feasible, available, and can serve the same function as surfactants in laundry detergent.
- Currently moving toward a restriction on use of APEs in laundry detergent consistent with RCW 70A.350.50.
- We welcome your input!

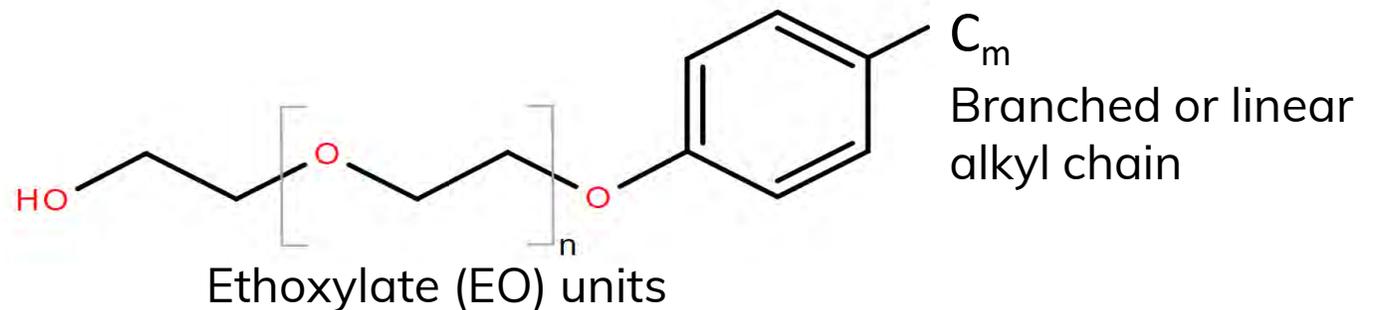


Laundry detergent is a significant source or use of APEs

- Laundry detergent is likely the largest use of APEs in commerce.
- Nonylphenol ethoxylates (NPEs) and octylphenol ethoxylates (OPEs) account for most APEs usage.
- Approximately 39% of NPEs global use is in institutional cleaners.
- NPE content ranges from 1 – 40% in these products.
- Estimated 370,000 pounds of NPEs are discharged yearly by on-premises laundries.

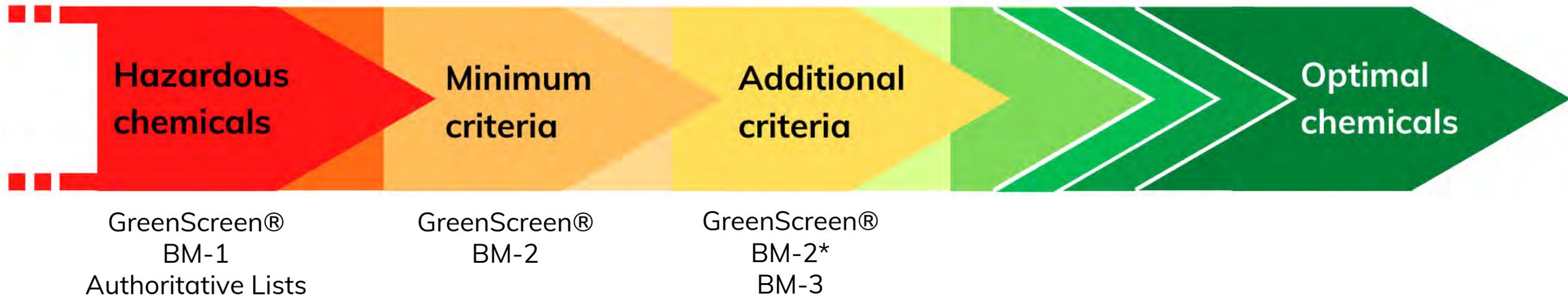
Scope of the priority chemical class

- Branched or linear alkyl chain is usually 9- carbons (**nonylphenol ethoxylates, NPEs**) or 8- carbons (**octylphenol ethoxylates, OPEs**).
- Number of ethoxylate (EO) units can vary
- APEs with other alkyl chain lengths and different numbers of EO units are also included in the scope of the priority chemical class.



Identifying data rich chemicals

- We identified data rich chemicals by looking for existing hazard assessments
 - GreenScreen® and Authoritative Lists
 - 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 a GreenScreen® assessment for nonylphenol ethoxylates (linear and branched, 1 – 20 EO).
- Utilized List Translator scores and identified authoritative listings for NPEs, OPEs, and their breakdown products.



**not all BM-2 meet additional criteria*

Criteria for safer is a spectrum



Hazards of alkylphenol ethoxylates

- Endocrine disruption
 - Estrogenic, anti-androgenic.
- Acute and chronic aquatic toxicity
 - Growth, reproduction and development.
- Persistence
 - Slow breakdown in anaerobic environments.
 - Present in wastewater treatment effluent.
- **Breakdown products**

Nonylphenol ethoxylates (NPEs)

- Scored as **BM-1_{TP}** in a GreenScreen® assessment.
- Present on authoritative and screening lists for endocrine activity.
- Available data suggests very high acute and chronic aquatic toxicity and high persistence in the environment.
- Do not meet our minimum criteria.

Associated CASRN	Common name	Meets minimum criteria?	GreenScreen® Score	Presence in authoritative lists	Presence in screening lists
9016-45-9	Nonylphenol, ethoxylated	NO	BM-1_{TP} LT-1	Endocrine Activity: EU SVHC – Candidate List EU SVHC – Authorisation List	Endocrine Activity: OSPAR TEDX SIN

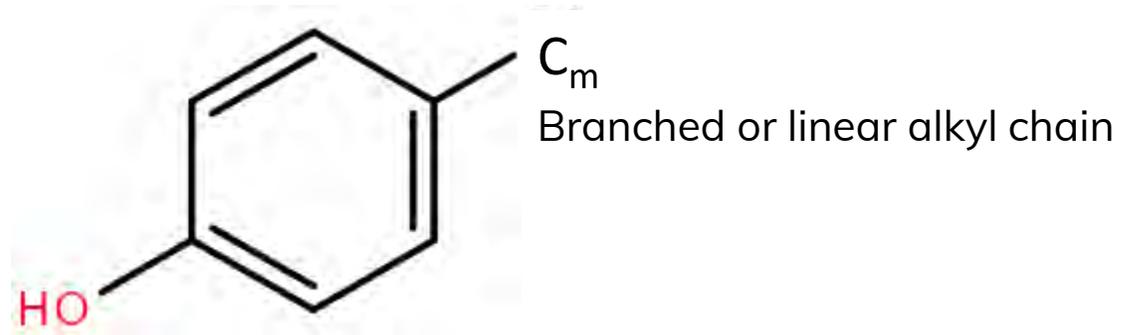
Octylphenol ethoxylates (OPEs)

- Score as **LT-1** chemicals using GreenScreen® List Translator.
- Present on authoritative and screening lists for endocrine activity.
- Available data suggests very high aquatic toxicity and persistence.
- Do not meet our minimum criteria.

Associated CASRN	Common name	Meets minimum criteria?	GreenScreen® Score	Presence in authoritative lists	Presence in screening lists
9036-19-5	4-(1,1,3,3-tetramethylbutyl) phenol, ethoxylated	NO	LT-1	Endocrine Activity: EU SVHC – Candidate List EU SVHC – Authorisation List	Endocrine Activity: OSPAR SIN

Breakdown products

- Incomplete mineralization during wastewater treatment, release into the environment.
- Loss of EO units, formation of alkylphenols.
- **Alkylphenols: nonylphenol, octylphenol.**



- Alkylphenoxy acetic acids, ethoxy acetic acids.
- Alkylphenol monoethoxylates, diethoxylates.



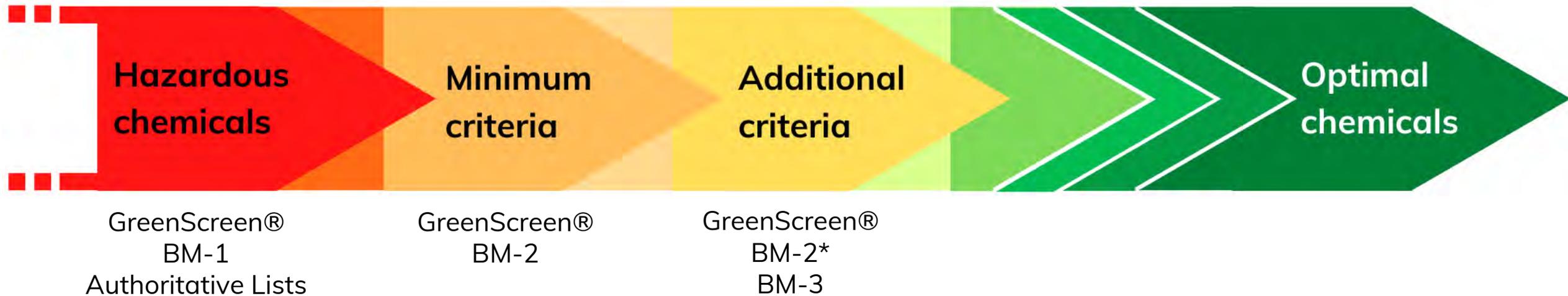
Hazards of alkylphenols

- Endocrine disruption
 - More potent than parent APEs.
- Acute and chronic aquatic toxicity
 - Very high toxicity.
 - Fish, invertebrates, and aquatic plants.
- Persistence
 - More persistent than parent APEs.
 - Accumulation in soil, sediment, biosolids.

Nonylphenols

- Present on authoritative and screening lists for endocrine activity and acute aquatic toxicity.
- Included on WA chemicals of high concern to children reporting list.
- Do not meet our minimum criteria.

Associated CASRN	Common name	Meets minimum criteria?	GreenScreen® Score	Presence in authoritative lists	Presence in screening lists
25154-52-3	4-nonylphenol, branched and linear	NO	LT-1	<p>Endocrine Activity: EU SVHC – Candidate List</p> <p>Acute Aquatic Toxicity: EU – GHS (H400)</p>	<p>Endocrine Activity: OSPAR TEDX SIN</p> <p>Acute Aquatic Toxicity: GHS – JP (H401) GHS – NZ (9.1A (A, All))</p>



**not all BM-2 meet additional criteria*

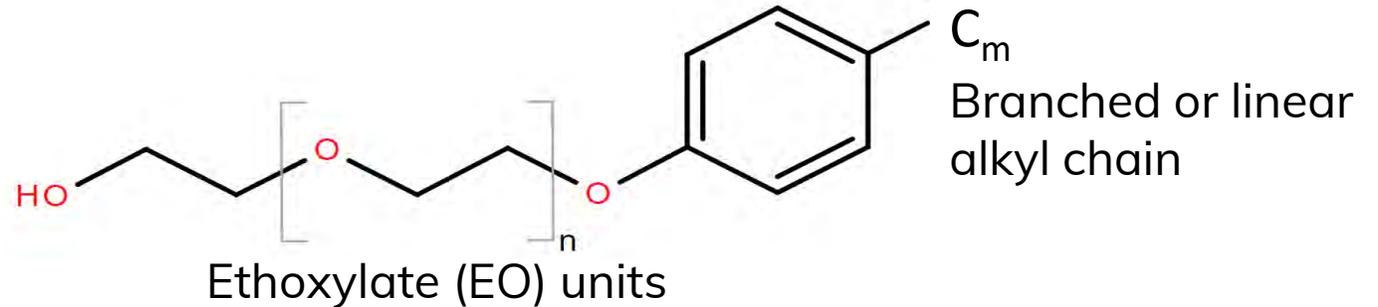
Criteria for safer is a spectrum

Conclusion: Hazards of APEs

- Alkylphenol ethoxylates as a class do not meet our minimum criteria for safer.
- Nonylphenol ethoxylates, octylphenol ethoxylates, and their breakdown products score as **Benchmark-1** or **LT-1** chemicals.
- Chemical alternatives will need to meet our minimum criteria to be identified as safer.

Surfactants in laundry detergents

- APEs function as **surfactants** in laundry detergents.
- Surfactants (surface-active agent) bind to both oily substances and water.
 - One end of a surfactant is attracted to oils/fats, and one end is attracted to water.
- Surfactants are used in cleaning products to help remove oily contamination when water alone is not sufficient.





Safer surfactants meet our minimum criteria for safer

GreenScreen® BM-2 surfactants (non-exhaustive list):

- Alcohol ethoxylates 68439-50-9
- Sodium lauryl sulfate 68585-47-7
- Decyl glucosides 68515-73-1
- Cocamidopropyl betaine 31789-40-0
- Sodium pentadecyl sulfate 68955-19-1
- Cocamidopropyldimethylamino oxide 68155-09-9

This does not constitute or imply endorsement, recommendation, or preference by the Washington State Department of Ecology.

Some detergents contain only safer surfactants

- Non-exhaustive list of brands/products identified:
 - Seventh Generation
 - Grainger
 - Presto! (Amazon Brand)
 - ECOS
 - Friendly Organic
 - Grove Collaborative

This does not constitute or imply endorsement, recommendation, or preference by the Washington State Department of Ecology.



Feasible laundry detergent performance requirements

- As outlined in our working draft criteria, if alternative surfactants are already used or marketed for the application of interest, we consider them feasible.
- Although APEs are primarily used in industrial uses (like hospitals and hotels), we did not identify any additional performance requirements for these uses.
- The same or similar laundry detergents are sold for residential and commercial use, just in larger containers for commercial use.

Safer detergents are feasible and available

- Including detergents in pak, powder, and liquid form.
- Laundry detergents using safer surfactants advertise performance/use claims:
 - “For commercial use”
 - “Professional”
 - “Fights stains”/ “Removes stains”
 - “Grease cutting”
 - Cold wash, baby, concentrated, hypoallergenic, and color safe varieties



Future steps

- A restriction on APEs in laundry detergents would reduce a significant source or use.
- Safer surfactants are feasible and available.
- At this point, the data support a restriction on the use of APEs in laundry detergents:
 - A restriction would be consistent with other countries/governments.
 - We would not require use of identified safer surfactants/products.
- Questions:
 - Timeframe
 - Intentionally added vs. inadvertent
 - ppm limit

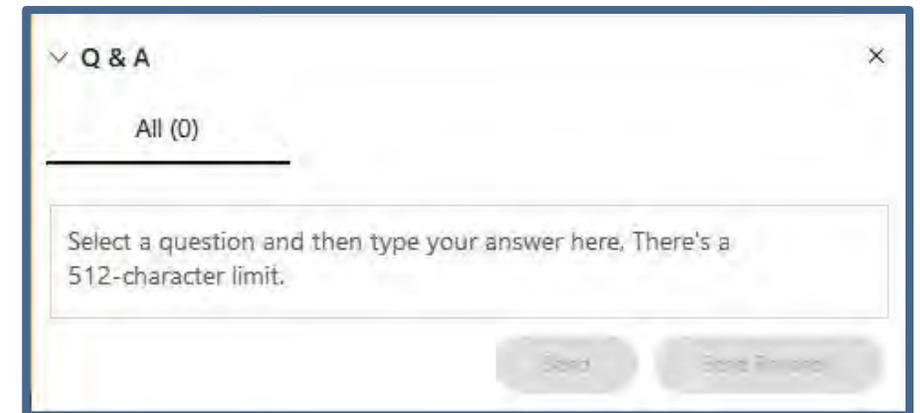


Section 3. Laundry detergents discussion

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.



Laundry detergents

Feedback category

Feedback from stakeholders during the May 18 discussion

Feedback about the potential regulation

- Consider the impact of restriction on industrial users in terms of cost (for example, on dry cleaners that have switched to wet cleaning, or small-size industrial cleaners).
- Testing of new products takes a year—this doesn't include manufacture, distribution, or selling off existing stock.

Other feedback

- Create list of CASRNs to enable common understanding of regulated APE class. This list would inform how long it may take to reformulate products.
- Consider other product benefits (such as reduced plastic packaging used in some new products).



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
Paints	PCBs	Identified paints with lower PCB concentrations, evaluating feasible and available	June 1
Thermal paper	Bisphenols	Evaluating Pergafast™ 201 (CAS 232938-43-1) and electronic receipts as alternatives	June 1
Recreational foam	Flame retardants	Evaluating whether flame retardant free foam is feasible	Mid-Summer
Can linings	Bisphenols	Evaluating C2CC™ beverage can linings for safer, feasible, and available, looking for food can alternatives	Mid-Summer
Personal care and beauty products	Phthalates	Identified dipropylene glycol as safer, assessing feasible and available, evaluating other alternatives on the Safer Chemical Ingredients List	Mid-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
Aftermarket treatments	PFAS	Evaluating Safer Choice carpet care products, identified other PFAS-free alternatives, working with manufacturers to evaluate safer	Mid-Summer
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)



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.