

PPAI Product Responsibility Summit™

Understand
Sustainability

Global Chemical Management, Emerging Chemicals Of Concern And Best Practices

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Global Chemical Management, Emerging Chemicals Of Concern & Best Practices

Presented by Ben Mead, Hohenstein Institute America

Hohenstein

- Family business with >75 years of experience in textiles
- >1000 employees worldwide
- Service & knowledge for the entire textile value chain
- Standard textile technology, chemical & biological tests
- Customized testing & services

Expertise to Make Textiles...

Perform

- Comfort
- Compression
- Odor
- Protection
- UV protection

Sustainable

- Chemical management
- Fair working conditions
- Ecological impact
- GMO cotton testing
- Biodegradability
- Microfibers
- OEKO-TEX®

Fresh

- Commercial & household laundry
- Microbe protection
- Ease of care

Better

- Textile technology
- Leather
- Comparative testing
- Supply chain communications
- Quality labels
- Marketing claim support

Fit

- 3D/4D scanning
- Sizing
- Fit analysis
- Pattern making
- Digitized materials
- 3D fitting

Comply

- Harmful substances
- Applied hygiene
- Medical devices

European Green Deal

The EU's chemicals strategy aims to better protect citizens and the environment and boost innovation for safe and sustainable chemicals.

- banning the most harmful chemicals in consumer products
- account for the cocktail effect of chemicals when assessing risks from chemicals
- phasing out the use of PFAS in the EU, unless their use is essential
- boosting the investment and innovative capacity for production and use of chemicals that are safe and sustainable by design, and throughout their life cycle
- establishing a simpler “one substance one assessment” process for the risk and hazard assessment of chemicals

CANDIDATE LIST OF SUBSTANCES OF VERY HIGH CONCERN (SVHC)

Suppliers of articles containing a Candidate List substance above a concentration of 0.1 % (weight by weight) have to give their customers and consumers information to be able to use them safely. Consumers have the right to ask suppliers whether the products they buy contain substances of very high concern.

Importers and producers of articles will have to notify ECHA if their article contains a Candidate List substance within six months from the date it has been included in the list (14 June 2023). Suppliers of substances on the Candidate List, supplied either on their own or in mixtures, have to provide their customers with a safety data sheet.

CANDIDATE LIST OF SUBSTANCES OF VERY HIGH CONCERN (SVHC)

UPDATE ON 17 JANUARY 2023

→ 9 new entries

UPDATE ON 14 JUNE 2023

→ 2 new entries

LIST OF NEWLY ADDED SVHC

Entry	SVHC	CAS-Number
	Brominated Flame Retardants	
225	BTBPE: 1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene]	37853-59-1
226	Tetrabrombisphenol A: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	79-94-7
229	Bis(2-ethylhexyl) tetrabromophthalate	26040-51-7
227	<u>Bisphenol S</u> , (4,4'-sulphonyldiphenol)	80-09-1
228	Barium diboron tetraoxide	13701-59-2
230	Isobutyl 4-hydroxybenzoate	4247-02-3
231	Melamine	108-78-1
	PFAS:	
232	Perfluoroheptanoic acid and its salts	375-85-9
233	reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine	-

BROMINATED FLAME RETARDANTS

Industrial usage of brominated flame retardants in all kind of plastic materials where flame/fire protection is needed:

TETRABROMOPHTHALATE IS BEING USED:

- in Polyurethane foam to replace pentabromodiphenylether
- in flexible PVC (Polyvinylchloride), e.g. wire & cable insulations, films, carpet backings, coated fabrics etc.

BTBPE IS BEING USED:

- especially in ABS to replace octabromodiphenylether
- in many thermo-plastics, especially when stability at high temperatures is needed
- Replacement for Tetrabromobisphenol A

MELAMINE

Melamine Resins are being used to large extent:

- Melamine/Formaldehyde (MF) resins & Melamine/Urea/Formaldehyde (MUF) resins
- Food contact materials, cookware & kitchen utensils
- Flame retardant finishing

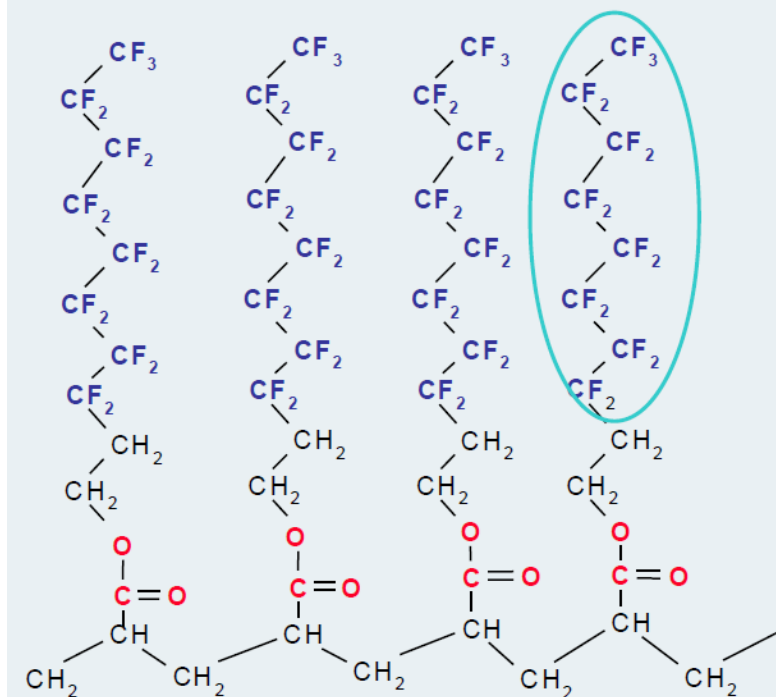
Textiles & Leather Finishing:

- Cellulose impregnated to enhance dimensional stability
- Resin finishing and synthetic tanning agents used in leather production

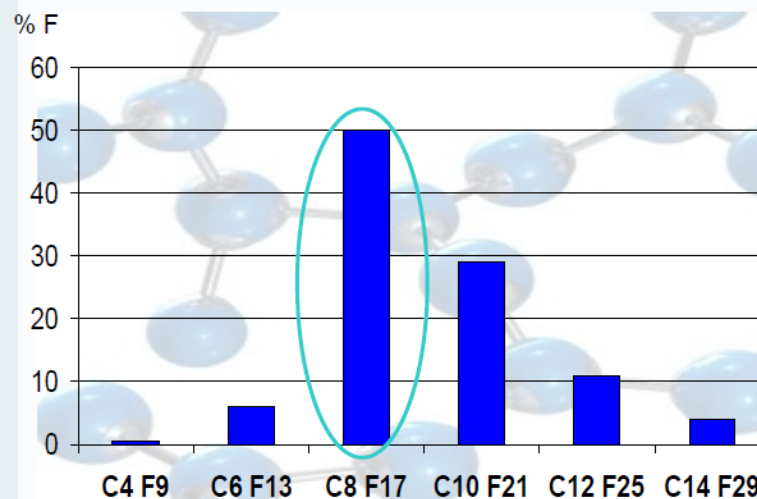
PERFLUOROHEPTANOIC ACID & COMPOUNDS

„C8-Chemie“

Produkte auf „C8-Basis“:



perfluorierte Seitenketten
unterschiedlicher Kettenlänge
(C4, C6, C8, C10 ...) mit
Verteilungsschwerpunkt bei C8



ECHA STATEMENT:

Although not registered under REACH. Identification as an SVHC can be seen as a measure to avoid regrettable substitution

ISOBUTYL-HYDROXYBENZOATE

**This compound is a group member of so-called
PARABENS WHICH ARE USED AS PRESERVATIVES:**

- Cosmetics
- Food
- Pharmaceuticals
- Usage in Textiles & Leather at high risk levels rather improbable

BISPHENOL S

LEATHER | Usage as Synthetic Tanning Agent (Syntan):

- Industry stakeholders estimate residual BPS concentrations in leather products in the range of 0,1 to 3 %.
- TEGEWA, a German association of process and performance chemicals manufacturers, confirmed that typical mean concentrations of BPS amount to around 0,26 % for 75 % of their members.

TEXTILES | Usage as Colour Fixing Agent in Polyamide (Nylon):

- Globally, 80 % of polyamide textiles are finished with syntans
- TEGEWA confirmed that concentration ranges typically between 200 to 1000 ppm (0,1 %)
- Cases exceeding the limit of 0,1 % are highly probable

EU BAN ON BISPHENOLS?

Five Bisphenols, identified as “endocrine disruptors” are explicitly listed:

- Bisphenol A
- Bisphenol B
- Bisphenol S
- Bisphenol F
- Bisphenol AF

BAuA
Federal Institute for Occupational Safety and Health
Division 5 - Federal Office for Chemicals
Friedrich-Henkel-Weg 1-25
D-44149 Dortmund, Germany

ANNEX XV RESTRICTION REPORT

PROPOSAL FOR A RESTRICTION

SUBSTANCE NAME(S):

4,4'-isopropylidenediphenol (Bisphenol A) and bisphenols of similar concern for the environment

EU BAN BISPHENOLS?

“All News” on ECHA website in August 2022:

Group assessment of bisphenols identifies need for restriction

- A group approach must be taken to cover all bisphenols having endocrine disrupting properties for the environment and fitting specific structural group boundaries, since owing to the high structural similarity of ED bisphenols there is a high risk that these substances are used among each other as drop-in substitutes for restricted uses (*e.g.* as it could be observed in thermal papers, where BPA has been largely replaced by BPS). This would render any restriction approach focusing on single ED bisphenols disproportionate.
- Regrettable substitution must be avoided to achieve an effective measure.

EU BAN BISPHENOLS?

August 31, 2023 - Germany withdrew the proposal following comments in the public stakeholder period

- Issues with definition of free bisphenol.
- It is expected to be revised and resubmitted

PFAS



What are PFAS?

Per- & polyfluoroalkyl substances (PFAS)

- Group of at least 4700-10,000 substances
- Used to manufacture many consumer products
- Often added to textiles (outdoor jackets, workwear, PPE)
- For water- & oil- repellent finishing

Why are PFAS so dangerous?

People

- Studies show contamination of blood & breast milk in global population
- Linked to effects on thyroid, hormonal system, liver damage, cancer, etc.

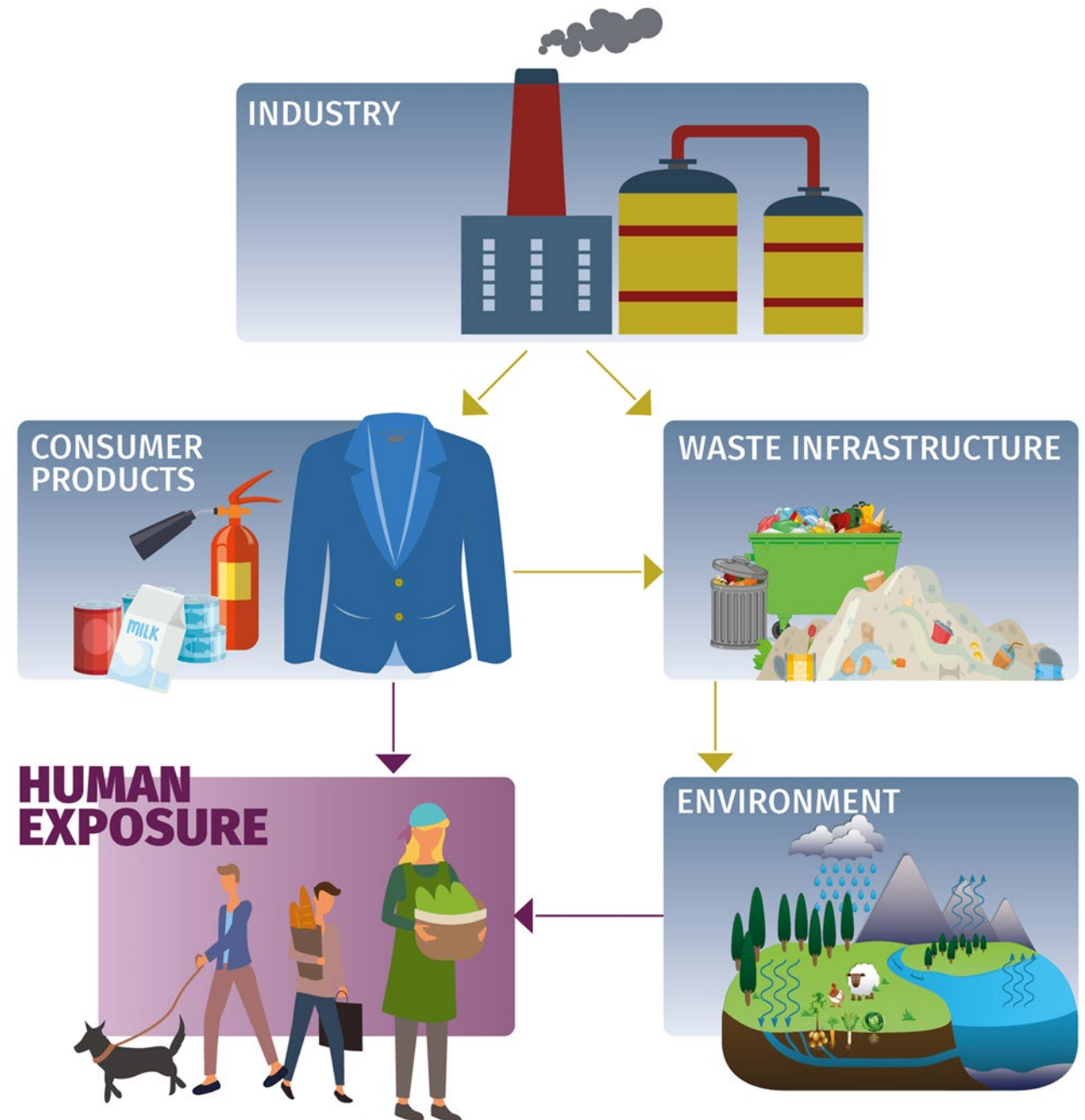
Planet

- Can affect environment during production, use, care & product disposal
- Highly stable “forever chemicals” do not degrade in groundwater & soils
- Can accumulate in living organisms
- Can be ingested by humans through the food chain

PFAS Impact

Concerns:

- Inventory management & disposal
- Product end of life
- Legacy contamination at manufacturing facilities
- Ongoing supply chain management & product testing



PFAS in Textiles

Challenges

- Understanding Intentional use versus contamination
- Maintaining performance while removing hazards
- Knowing where PFAS are used within complicated supply chains
- Keeping up with:
 - Rapidly changing state, federal & international regulations
 - Industry initiatives & innovations
 - Customer RSLs & consumer demands
- Communicating with customers & suppliers

PFAS in Textiles

Claim	PFAS Potential
Stain Resistant/Repellent	Likely
Water Resistant/Repellent	Maybe
PFOA & PFOS Free	Maybe other PFAS chemicals
No PFAS- or PFC-based WR-finishing	PFAS-based membrane could still be used
PFC Free	Other PFAS chemicals could still be present
No Intentional Use of PFAS	Not intentional but possible residues of unintended PFAS
No Intentional Use of PFAS + PFAS Not Detected	No PFAS-based membrane, No PFAS detected by standardized testing

PFAS Legislation & Regulations

- Country & state-level PFAS regulatory developments **growing quickly**
- Shift from water & cleanup regulations to **consumer products**
- **Focus** on specific chemicals, product, categories or all products approach
- 4 types of restrictions:
 - Ban on intentionally added PFAS
 - Reporting/notification
 - Labeling/warning
 - Manufacturer certificate of compliance



U.S. Federal Activity

Toxic Substances Control Act (TSCA)

- **Applies to:** Manufacturers & importers of chemical substances or articles (including components & DWR treated goods)
- Requires **notification** to EPA at least 90 calendar days prior to manufacturer, import, or processing – use, quantity, impact data
- **3 families** of PFAS chemicals either prohibited, requiring notification or not regulated



California AB 1817

- Effective 1/1/2025
- Applies to **apparel**
- Requires manufacturer to **certify to retailer** & release from liability
- No **intentionally added** PFAS, or PFAS as a **contaminant** 100 ppm (2025)
- **Limit reduced** to 50 ppm in 2027 & 10 ppm in 2029
- ** New York has a similar bill



EU Updates

- The Netherlands, Denmark, Germany, Norway & Sweden have formally submitted proposal to **BAN** all PFAS
- If successful, Ban likely effective in 2026 earliest
- This proposal still include fluoropolymers like PTFE



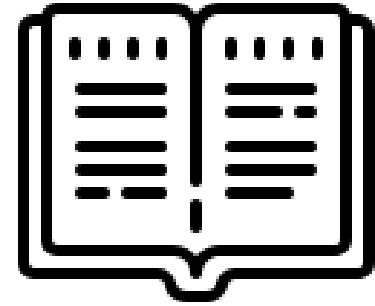
**What
can I
do?**



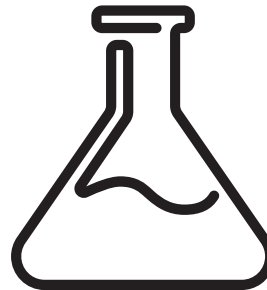
How does the industry do it?



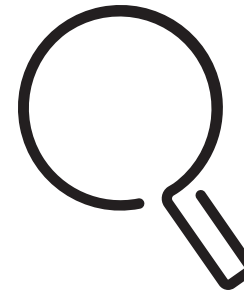
Hope for the best



Company policies



Testing protocols



Disclosure requirements



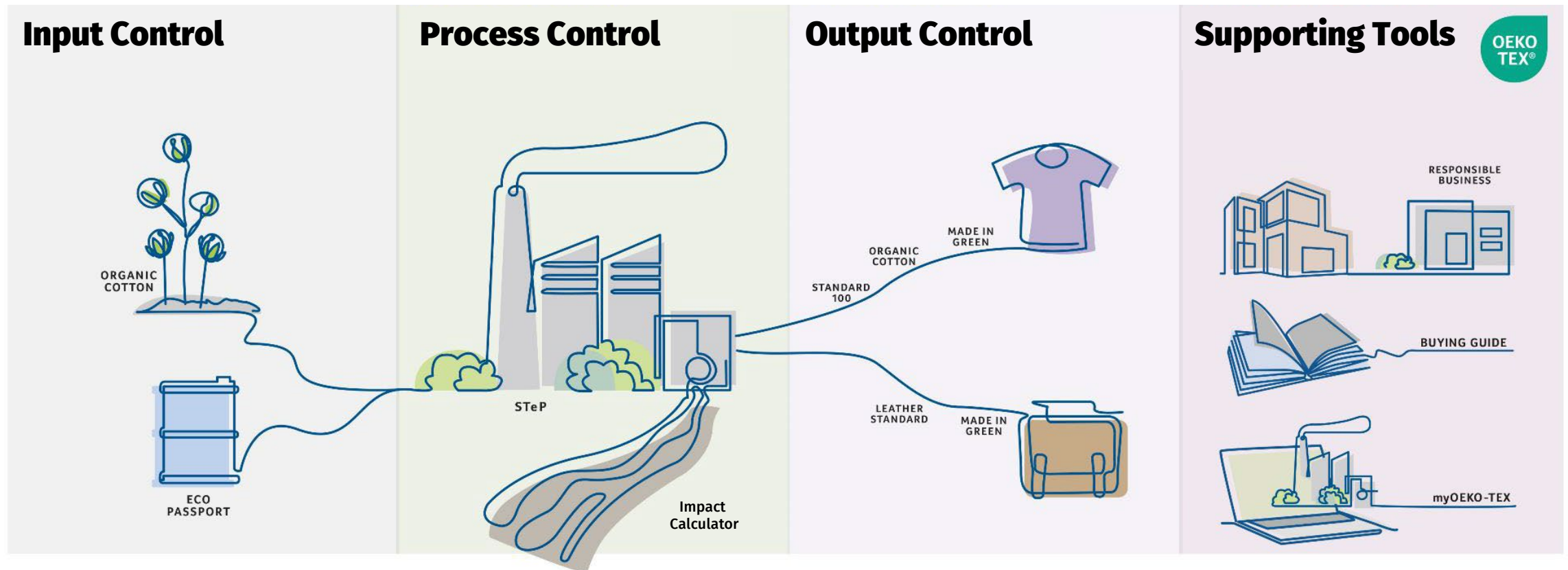
On-site verification

Build it or buy it?

- Internal or 3rd party
- Legislation tracking
- Restricted substance list management
- Laboratory management
- Test report data management
- Supplier management
- External communications

OEKO-TEX® System

The highest standards for textiles & leather
- driven by sustainability & grounded in proven science.



Basic Elements

OEKO-TEX® STANDARD 100



Thank you

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Sustainability