PFAS AND ALTERNATIVES :

COMMERCIAL AVAILABILITY AND CURRENT USE IN 3 SECTORS

Tackling PFAS Pollution – Belgian Presidency of the EU
February 2024

Eeva LEINALA, OECD

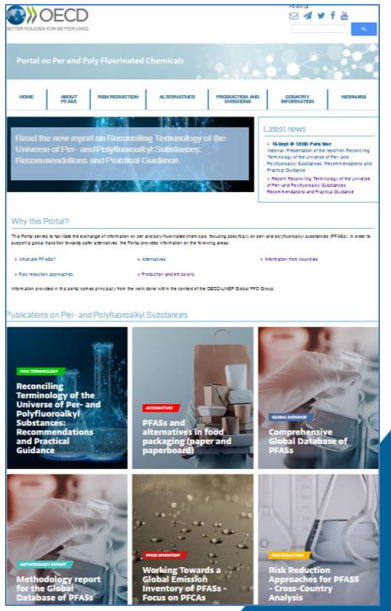
BETTER POLICIES FOR BETTER LIVES

PFAS @ the OECD

https://oe.cd/pfass
https://oe.cd/gfe-pfass

Background to the OECD/UNEP Global PFC Group

- Established in 2012 in response to ICCM Resolution II/5;
- Set up to facilitate exchange of information on PFAS, and to support a global transition towards safer alternatives;
- Brings together experts from OECD member & non-member countries in academia, governments, industry, IGOs, NGOs.



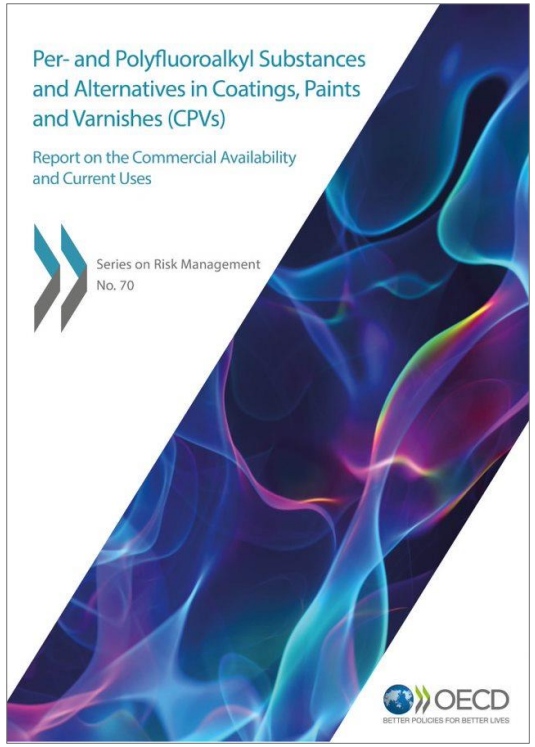
http://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/
oe.cd/pfass

Collect information on commercial availability & current uses of PFAS & alternatives in different industry sectors and on their hazard profile

Food packaging (paper and paperboard)

Published in 2020
Hazard info on the alternatives - 2022

Coatings, paints and varnishes



Published in 2022
Hazard info on the alternatives - 2024

Cosmetics

February 2024

Each Sector is Different

Sector	Food Packaging (Paper and Paperboard)	Paints, Coatings and Varnishes	Cosmetics
Alternatives available?	Yes	Yes	Yes
Provide needed functionality?	Yes	Except for specialised uses	Yes
Are they being used?	Not really	Yes, except where certain functionality is required	Yes
Key point:	Alternatives are higher cost and create disincentive to shift to them	PFAS is more expensive than alternatives; only used when specific functionality required	Replacements are not drop-in. Reformulation of products occurring. Not specific 'alternatives'.

Are regrettable substitutes being chosen?

Non-fluorinated Alternatives

Substance Name	CAS	Authority Classifications	Industry Classifications	HH Hazard Assessments	Environmental Hazard Assessments	Persistence & Bioaccumulation Assessments
TopScreenTM formulations	Confidential					
Natural greaseproof paper (NGP)	N/A					
Silicone oils (with added preserving agents)	N/A					
Silicone resins	N/A					
Silicone elastomers	N/A					
Natural and synthetic cellulose fibres bleached or unbleached	N/A					
Wood pulp bleached or unbleached	N/A					
Recycled fibres made from paper or paperboard	N/A					
2-hydroxy-2-methylpropiophenone	7473-98-5					
Siloxanes and Silicones, di-Me, hydrogen-terminated, reaction products with acrylic acid and 2-ethyl-2- [(2-propenyloxy)methyl]-1,3-propanediol	155419-56-0					
Cyclohexane-1,2,4-triyltris(ethylene)	2855-27-8					
Siloxanes and Silicones, di-Me, Me vinyl, hydroxy-terminated, reaction products with 2-((3-(trimethoxysilyl)propoxy)methyl)oxirane	102782-94-5					
Siloxanes and Silicones, di-Me, Me vinyl, hydroxy-terminated, reaction products with 3-(2-(trimethoxysilyl)ethyl)bicyclo(4.1.0)heptane	917773-10-5					

Note: Red shading indicates no data identified and green shading represents where data was identified

Non-fluorinated Alternatives

Substance Name (from Appendix 1 of CPV report)	CAS Number	Authority Classifications	Industry Classifications	HH Hazard Assessments	Environmental Hazard Assessments	Persistence & Bioaccumulation Assessments
Chlorinated polyethylene	No CAS provided					
Chlorosulfonated polyethylene	No CAS provided					
Epoxy	90598-46-2					
Ethylene-propylene rubber	No CAS provided					
Neoprene	No CAS provided					
Nylon	No CAS provided					
Polyester	113669-97-9					
Polyethylene	No CAS provided					
Polymethylmethacrylate powder	9011-14-7					
Polyolefin	No CAS provided					
Polysiloxane	63148-53-8					
Polyurethane	9009-54-5					
PVC	9002-86-2					
Silica based	No CAS provided					
Silicone polymers (made of silanes and siloxanes) (For example, non-ionic modified silicone polyether and a mixture of a silicone polyether and a diocylsulfosuccinate in ethanol and water)	Example 67674-67-3 (10-15%) and dioctylsulfosuccinate (50-55%)					
Sulfosuccinates	55184-72-0					
Sulfosuccinates (Sulfosuccinate mixed with water and 2,2 dimethylpropane-1,3-diol)	577-11-7					
Thermoplastic elastomer	No CAS provided					

Note: Yellow shading indicates no data identified and blue shading represents where data was identified

Challenges with Analysis

- Limited publically available information on:
  - Alternatives used
  - Substance identity of the alternative
  - Costs
  - Market penetration
- Due to gaps in substance identity, analysis of availability of hazard classification/assessment is hampered

THANK YOU

eeva.leinala@oecd.org

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