



BASEL / ROTTERDAM / STOCKHOLM
CONVENTIONS

Plastics-related chemicals and polymers of concern in existing chemicals conventions and relevant international frameworks

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Secretariat of the Basel, Rotterdam and Stockholm conventions

Global agreements for sound management of chemicals and waste

Strategic Approach to International Chemicals Management (SAICM)

Montreal Protocol
(Ozone Depleting Substances)

Minamata Convention on Mercury

 **Basel Convention**

- 191 Parties
- Hazardous wastes/other wastes
- Environmentally sound management (ESM)
- Prevention and minimization
- PIC procedure (control transboundary movements)



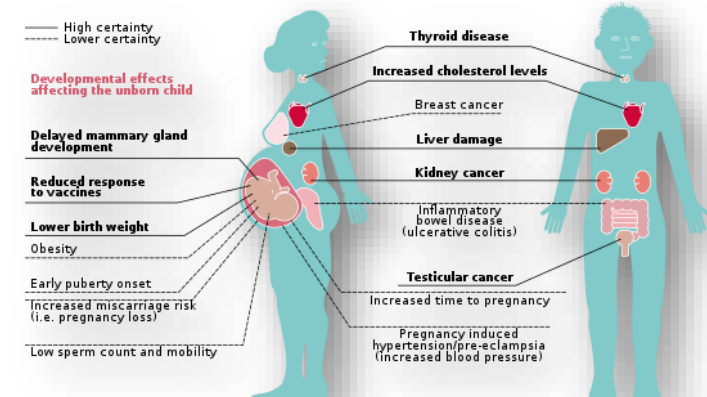
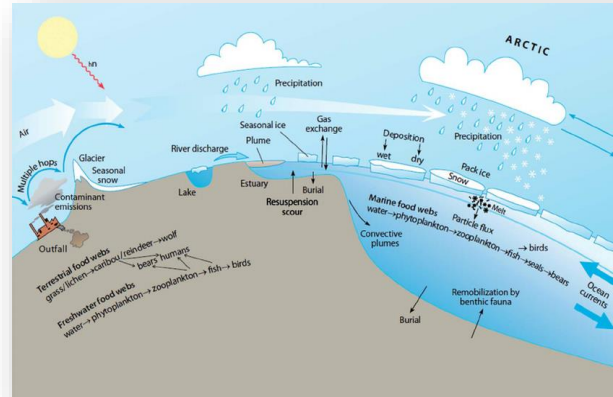
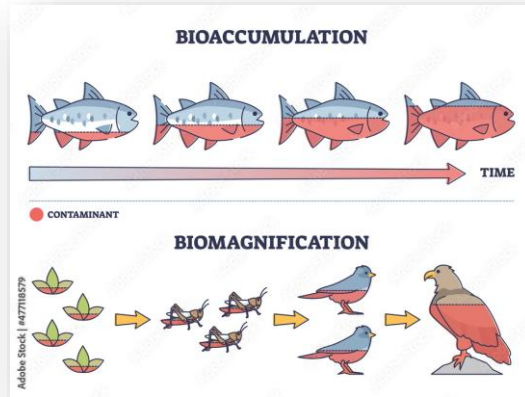
 **Stockholm Convention**

- 186 Parties
- 34 Persistent Organic Pollutants (POPs) +review process
- Control production, use, import/export, waste, unintentional releases of POPs

 **Rotterdam Convention**

- 165 Parties
- 55 chemicals +review process
- PIC procedure for Annex III chemicals, information exchange

Persistent organic pollutants



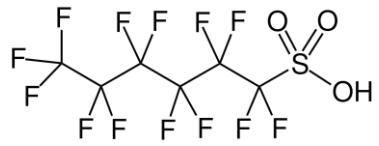
A group of organic compounds that possess characteristics of:

- Persistence
- Bio-accumulation
- Adverse effects
- Potential for long-range environmental transport

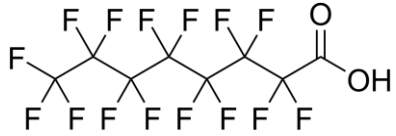


STOCKHOLM

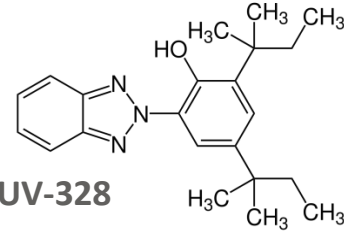
Plastics-related chemicals under the Stockholm Convention



PFHxS, its salts and PFHxS-related compounds



PFOA, its salts and PFOA-related compounds



UV-328

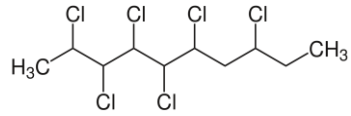
34 POPs

17 plastics-related chemicals

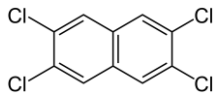
Elimination
Specific exemptions

Restriction

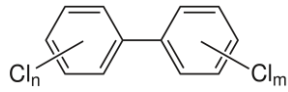
Acceptable purposes



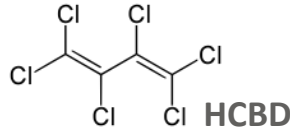
SCCPs



PCNs



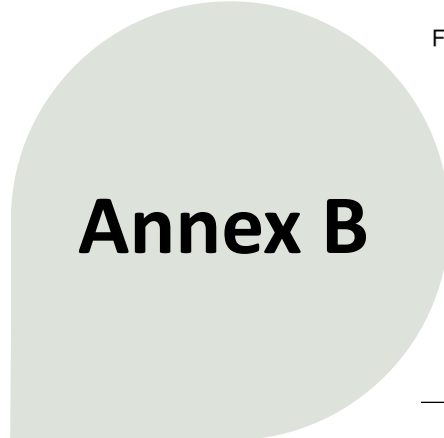
PCBs



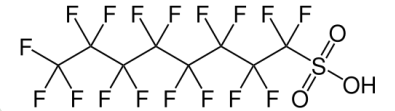
HCBD



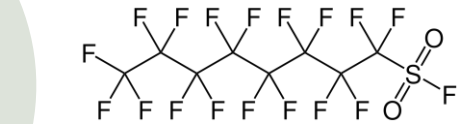
Annex A



Annex B

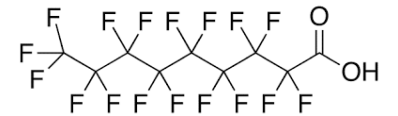


PFOS, its salts and PFOSF

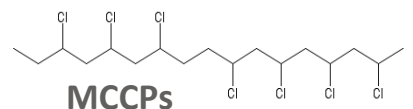


PFOS, its salts and PFOSF

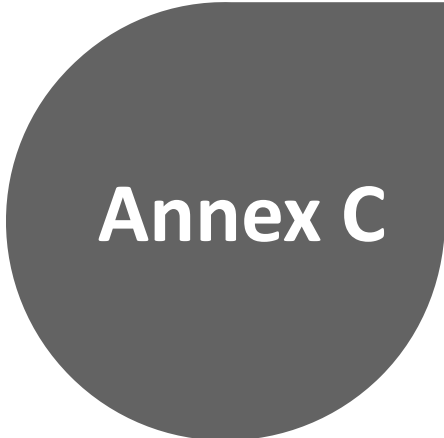
Under review
POPs Review Committee



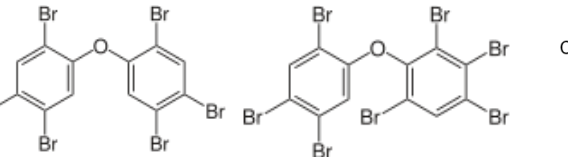
Long-chain PFCAs



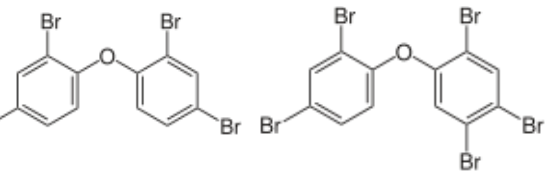
MCCPs



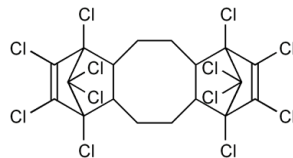
Annex C



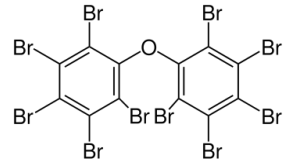
HexaBDE and HeptaBDE (C-OctaBDE)



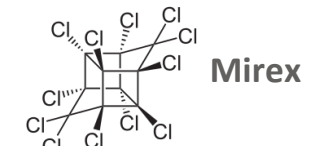
TetraBDE and PentaBDE (C-PentaBDE)



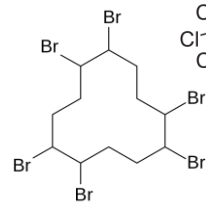
Dechlorane Plus



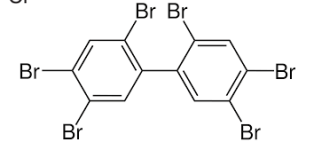
DecaBDE



Mirex



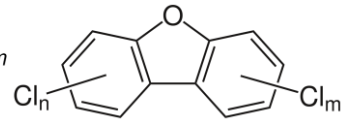
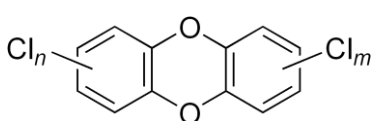
HBCDD



Hexabromobiphenyl

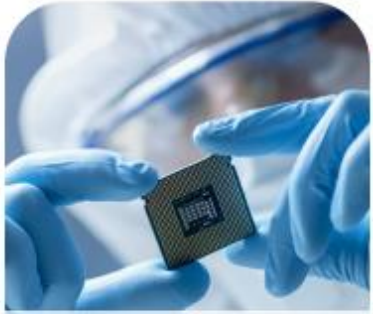
Unintentional releases

BAT/BEP



Dioxins and furans

Time-limited exempted uses for PFOA, its salts and PFOA-related compound (2019)



1) Semiconductors



2) Photographic coating



3) Textile for protection



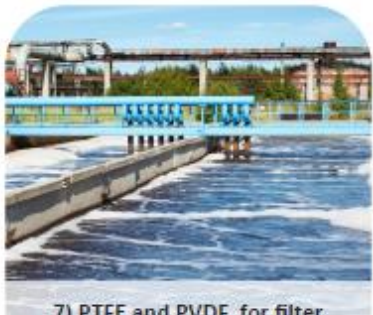
4) Medical devices



5) Fire-fighting form



6) Pharmaceutical products



7) PTFE and PVDF for filter membranes Ex. Water treatment



8) FEP for electrical wire and cable



9) Fluoroelastomer for car interior

Time-limited exempted uses for c-decaBDE (2017)



1) Parts of aircraft



2) Parts of vehicles



3) Parts of vehicles



4) Additives in heating appliances



5) Textiles



6) Poly urethane foam

Basel Convention: Technical guidelines on the environmentally sound management of plastic waste

Adopted at the COP-16 in May 2023: [UNEP/CHW.16/6/Add.3/Rev.1](#)

Annex II
Plastic waste,
including mixtures **Y48**



Annex VIII
Hazardous plastic waste **A3210**



Annex IX
Clean plastic waste for
recycling **B3011**



Prior
Informed
Consent
(PIC)

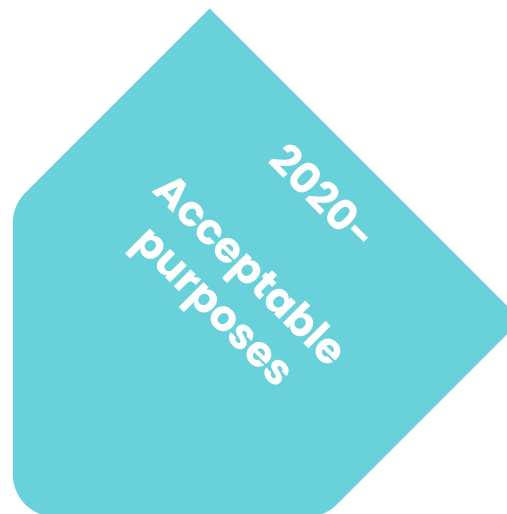


BC-14/12:
Plastic Waste
Amendments
Effective 1 Jan 2021

Evaluation of the continued need for PFOS

Every 4 years (2015, 2019, 2023...)

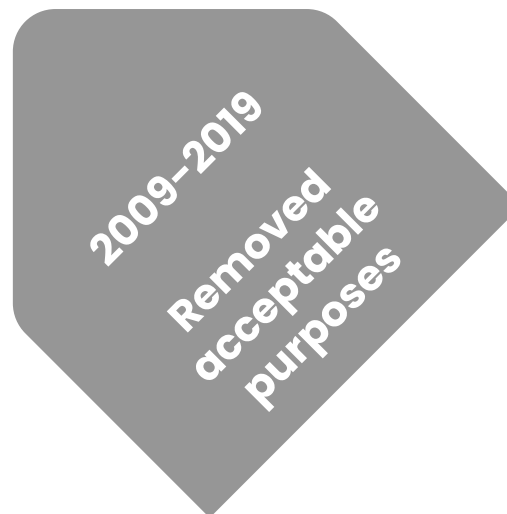
- **Hard metal plating** in closed-loop systems
- **Fire-fighting foam** for liquid fuel vapour suppression and Class B fires in installed systems, including both mobile and fixed systems



- Insect baits with **sulfluramid** (CAS No. 4151-50-2) as an active ingredient for control of leaf-cutting ants from *Atta spp.* and *Acromyrmex spp.* for agricultural use only

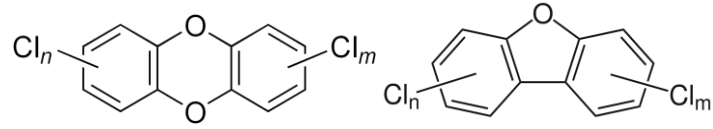


- Photo masks in semiconductor/LCD
- Decorative metal plating
- Parts for color printers/color copy machines
- Insecticides for red imported fire ants/termites
- Chemically driven oil production
- Carpets; Leather/apparel; Textile/upholstery; Paper/packaging; Coatings/coating additives; Rubber/plastics



- Photo-imaging
- Photo-resist/anti-reflective coatings for semiconductors
- Etching agent for compound semiconductors and ceramic filters
- Hard metal plating in closed-loop
- Aviation hydraulic fluids
- Certain medical devices
- Fire-fighting foam

Unintentional releases

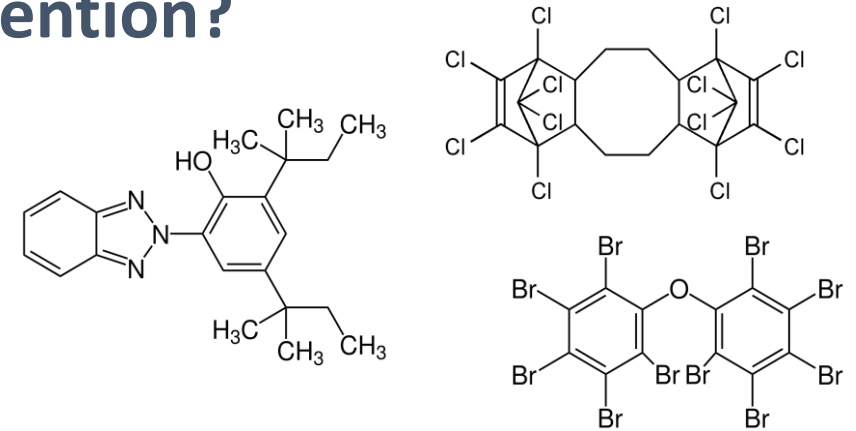


Dioxins, furans, PCNs, PCBs, HCBD, hexachlorobenzene, pentachlorobenzene



Best available technique and best environmental practices (BAT/BEP)

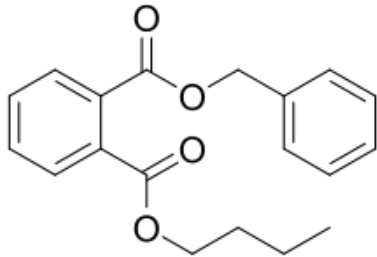
How is the transparency and traceability of POPs in products and articles ensured under the Stockholm Convention?



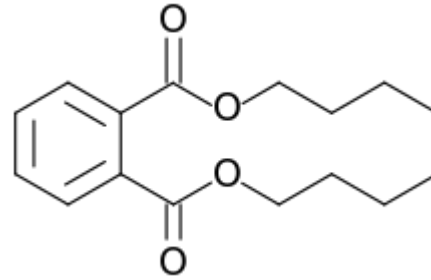
Article 6, paragraph 1:

- (a) Develop appropriate strategies for identifying:
 - (i) Stockpiles consisting of or containing chemicals listed in Annex A or B;
 - (ii) Products and articles in use and wastes consisting of, containing or contaminated with a chemical listed in Annex A, B or C;
- (b) Identify, to the extent practicable, stockpiles consisting of or containing chemicals listed in Annex A or B on the basis of the strategies.

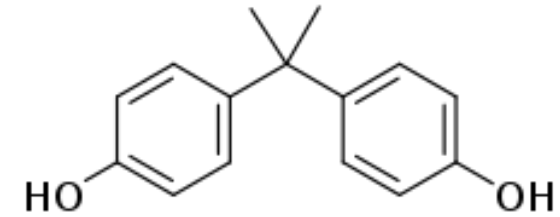
Plastics-related chemicals not covered by global regulations



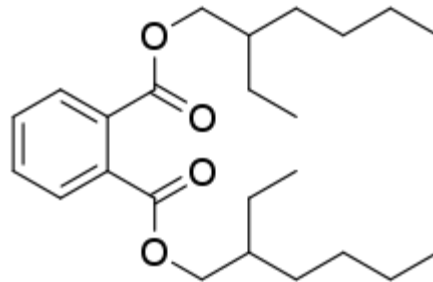
Benzyl butyl phthalate



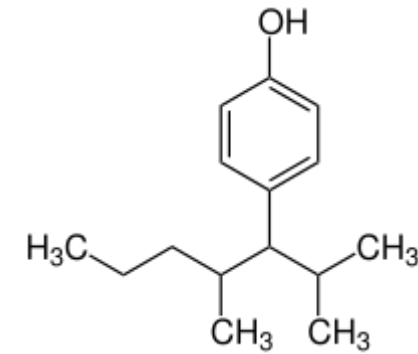
Dibutyl phthalate



Bisphenol A



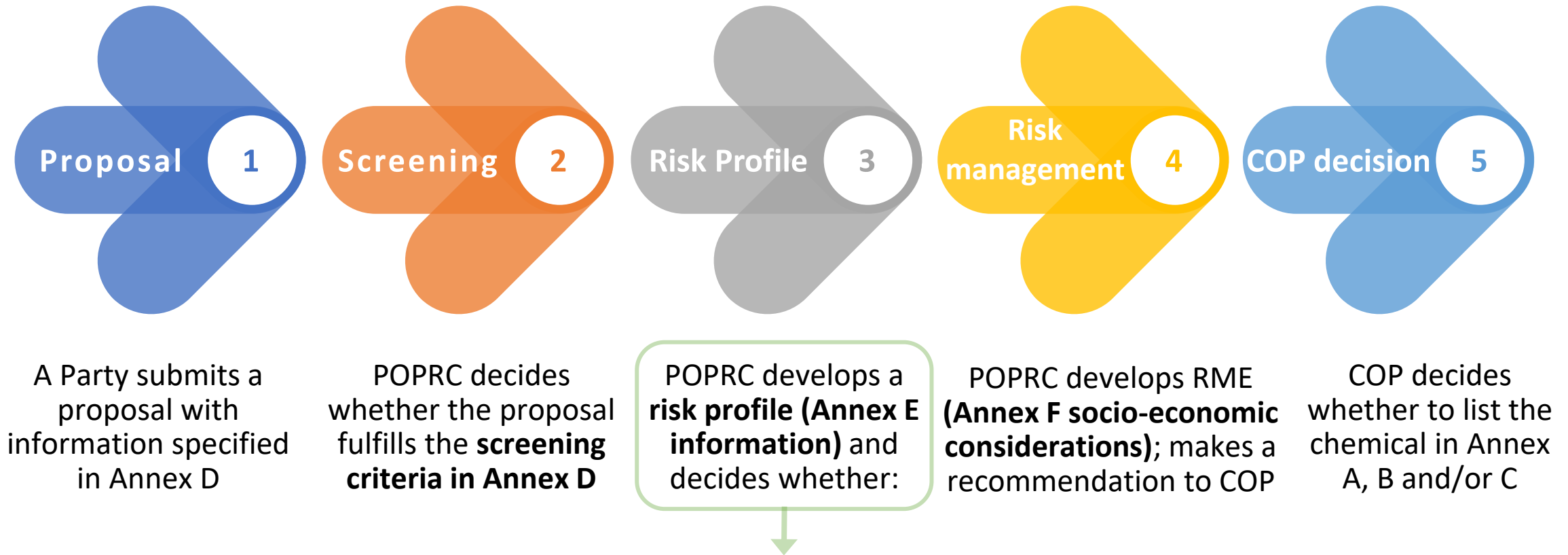
Di-2-ethylhexyl phthalate (DEHP)



Nonylphenol



Decision-making flow for listing a chemical in Annex A, B and/or C



The chemical is likely as a result of its long-range environmental transport to lead to significant adverse human health and/or environmental effects such that global action is warranted.



Fact Sheet #5

For more information consult "Drowning in Plastics - Marine Litter and Plastic Waste Vital Graphics" publication by UNEP, the BRS Secretariat and GRID-Arendal. Available from link <https://bit.ly/3G0rZ8E>

Plastic additives

Every plastic item contains additives that determine the properties of the material and influence the cost of production (Stenmarck et al. 2017). Typical additives include stabilisers, fillers, plasticisers, colourants, as well as functional additives such as flame retardants and curing agents (Figure 1). Some plastic additives are hazardous to human health and the environment (Stenmarck et al. 2017).

Leakage and degradation

Plastics are composed of chains of polymer be weakly bound to the polymers or react matrix. The weakly bound additives can leach from plastics during normal use, when in landfill or improper disposal in the environment.

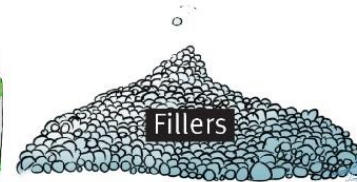
Five types of plastic additives



Functional additives include for example stabilizers, antistatic agents, flame retardants, plasticizers, lubricants, slip agents, curing agents, foaming agents, biocides, etc.



Colorant are substances such as dyes or pigments added to give color to plastic. Some of them are added to give a bright transparent color.



Fillers are added to change and improve physical properties of plastics. They can be minerals, metals, ceramics, bio-based, gases, liquids, or even other polymers.



Reinforcement are used to reinforce or improve tensile strength, flexural strength and stiffness of the material. E.g. glass fibres, carbon fibres, etc.

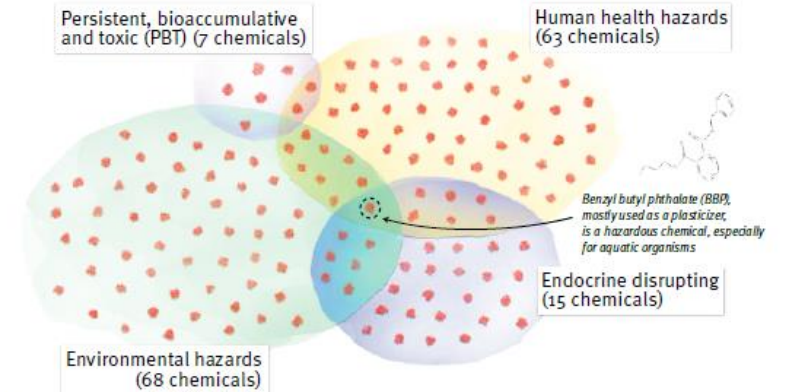


NIAS are chemicals that arrive in products from processes such as reaction by-products or break down products

Sources: Hansen et al. (2013). Illustration by GRID-Arendal (2020).

Hazardous chemicals in plastics

A 2018 study found that 3,377 chemicals are potentially associated and 906 chemicals are likely associated with plastic packaging. Out of these, 148 have been identified as most hazardous (Groh et al. 2018).

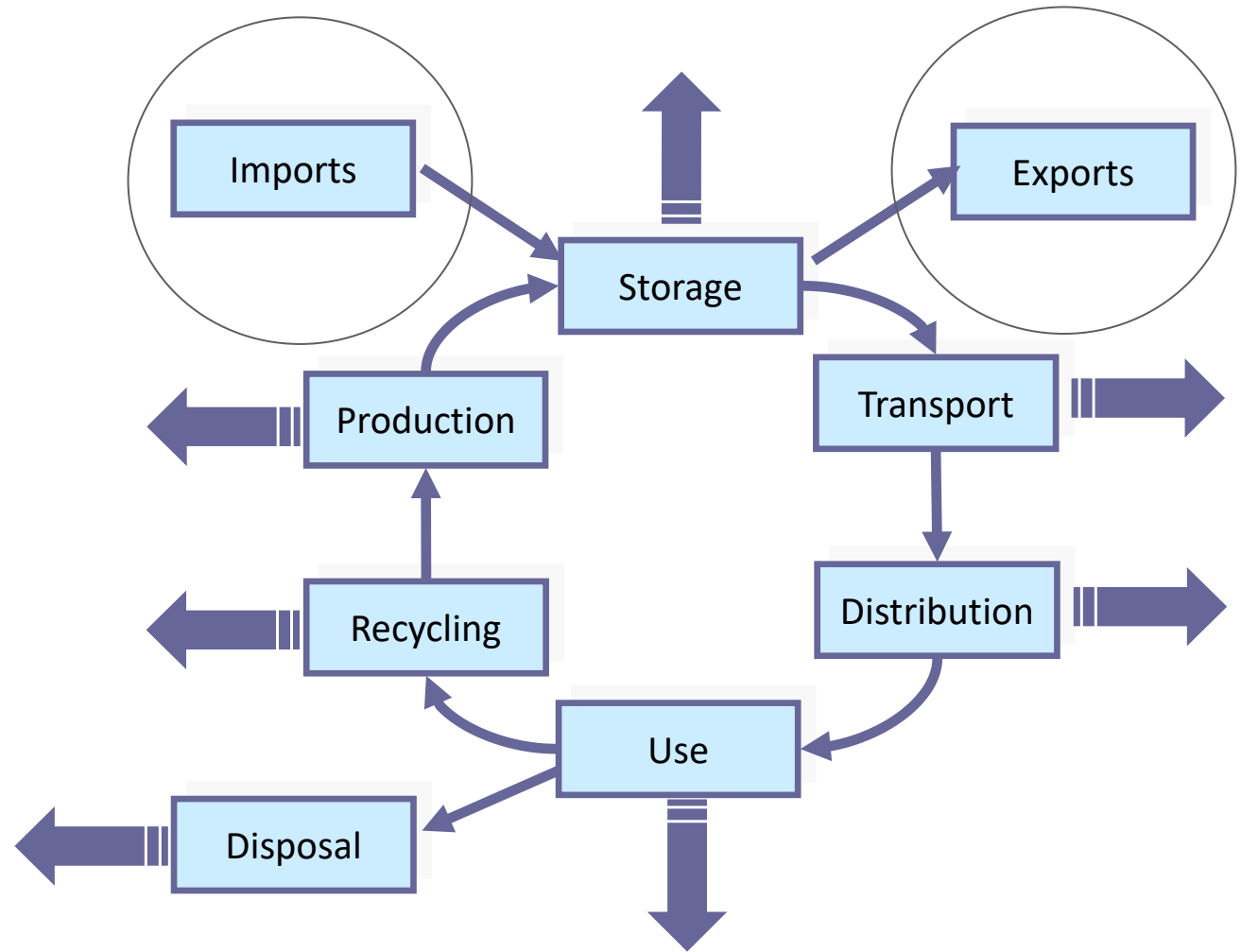
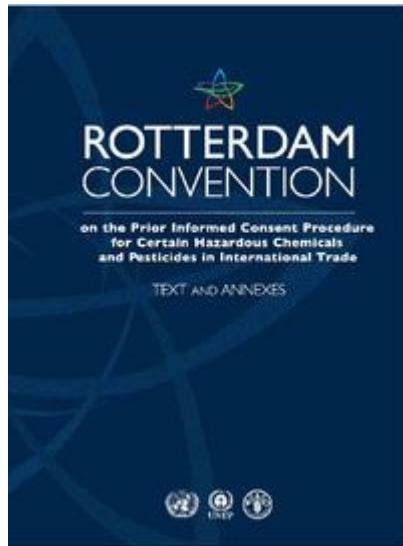


Source: Groh et al. (2018). Illustration by GRID-Arendal (2020).

Share Responsibility



ROTTERDAM CONVENTION



Prior Informed Consent (PIC) Procedure



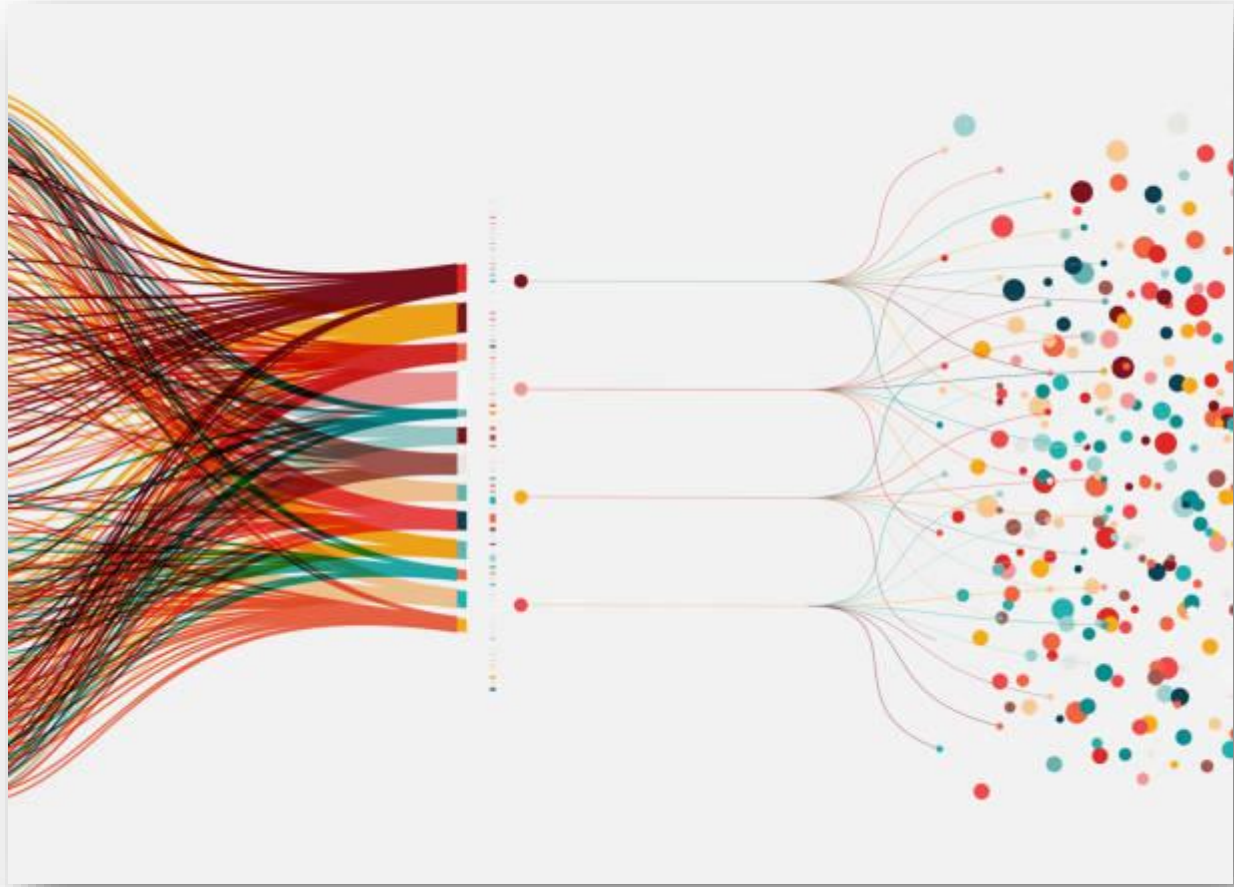
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CONVENTIONS



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Many thanks to the financial support by Norway
and technical review by several experts



Thank you!



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