

Challenges of plastic waste management affecting the Great Lakes Basin

Agreements relevant to plastic waste management:

Basel Convention Plastic Waste Amendments

Canada-U.S. waste trade agreement of 1986 and arrangement of 2020: what do they mean for the plastic waste management in the Great Lakes basin?

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Why does the Basel Convention have plastic amendments?

Objective of the Basel Convention ¹ :

- Minimize the generation of hazardous waste;
- Ensure they are disposed in an environmentally sound manner and as close to the source of generation as possible;
- Minimize the international movement of hazardous waste;
- Controls the movement of dangerous wastes and other waste through its provisions for “Prior Informed Consent” (PIC)

Plastic crisis

- Plastic pollution data worldwide raised an alarm.
- China – strict enforcement made it impossible for countries to export plastic waste to China

Plastic amendments

- Decision made at COP in May 2019
- Plastic Waste Amendments – Entered into Force 9 months after May 2019
- The amendments were made to Annexes II on other waste; Annex VIII on hazardous waste, and Annex IX on waste not requiring prior informed consent.

1. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, see: <http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx>

Intention of the New Basel Plastic Amendments

Basel Plastic Amendments will control the transboundary movement of plastic waste that are difficult or impossible to recycle:

- Plastic waste mixtures
- Halogenated polymers
- Contaminated plastic waste

with the exception of the following

4 groups of plastic waste, provided they are destined for recycling in an environmentally sound manner and almost free from contamination and other types of waste

Basel Convention Plastic Waste Amendments, see:
<http://www.basel.int/Implementation/Plasticwaste/PlasticWasteAmendments/FAQs/tabid/8427/Default.aspx>



Plastic types exempt from Basel Convention control – Annex IX – No Prior Informed Consent Required

- **Sorted, cleaned**
- **halogen-free**
- **destined for recycling in environmentally-sound manner**
- **almost free from contamination**

- Plastic waste almost exclusively¹¹ consisting of one non-halogenated polymer, including but not limited to the following polymers:

- Polyethylene (PE)
- Polypropylene (PP)
- Polystyrene (PS)
- Acrylonitrile butadiene styrene (ABS)
- Polyethylene terephthalate (PET)
- Polycarbonates (PC)
- Polyethers

• Mixtures of plastic waste, consisting of polyethylene (PE), polypropylene (PP) and/or polyethylene terephthalate (PET), provided they are destined for separate **recycling**¹³ of each material and in an environmentally sound manner and almost free from contamination and other types of wastes.¹⁰

- Plastic waste almost exclusively¹¹ consisting of one cured resin or condensation product, including but not limited to the following resins:

- Urea formaldehyde resins
- Phenol formaldehyde resins
- Melamine formaldehyde resins
- Epoxy resins
- Alkyd resins

- Plastic waste almost exclusively¹¹ consisting of one of the following fluorinated polymers:¹²

- Perfluoroethylene/propylene (FEP)
- Perfluoroalkoxy alkanes:
 - Tetrafluoroethylene/perfluoroalkyl vinyl ether (PFA)
 - Tetrafluoroethylene/perfluoromethyl vinyl ether (MFA)
- Polyvinylfluoride (PVF)
- Polyvinylidene fluoride (PVDF)

Basel Convention Plastic Waste Amendments, see:

<http://www.basel.int/Implementation/Plasticwaste/PlasticWasteAmendments/FAQs/tabid/8427/Default.aspx>

Definition of ESM of waste under the Basel Convention



“taking all practicable steps to ensure that hazardous and other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.”¹

2013: Framework for the environmentally sound management (ESM) of hazardous wastes and other wastes²

- In applying the framework, stakeholders should respect the waste management hierarchy (prevention, minimization, reuse, recycling, other types of recovery, including energy recovery, and final disposal).

1. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, see: <http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx>

2. Framework for the environmentally sound management of hazardous wastes and other wastes, see:

[http://www.basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMFramework/tabid/3616/Default.aspx#:~:text=The%20Framework%20for%20the%20environmentally%20sound%20management%20\(ESM\),BC-11/1%20on%20Follow-up%20to%20the%20Indonesian-Swiss%20country-led%20initiative.](http://www.basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMFramework/tabid/3616/Default.aspx#:~:text=The%20Framework%20for%20the%20environmentally%20sound%20management%20(ESM),BC-11/1%20on%20Follow-up%20to%20the%20Indonesian-Swiss%20country-led%20initiative.)

What is meant by “almost free from contamination”?

Understanding appropriate levels of contaminants in Annex IX plastic wastes,

NGOs recommends¹ :

- ❖ Impose a 0.5% contamination limit for non-hazardous, non-target material in plastic waste exports and imports
- ❖ No hazardous and toxic chemical contaminants

1. Transposing the Basel Convention plastic waste amendments: challenges & recommendations. See: [Policy-briefing_Transposing-the-Basel-Convention-plastic-waste-amendments_November-2020.pdf \(no-burn.org\)](#)



Toxic additives in plastic: more than 140 toxic chemicals are used in plastic

Examples of substances of very high concern used as plastic additives

Adapted from Wagner, S., Schlummer, M. (2020) Legacy additives in a circular economy of plastics: Current dilemma, policy analysis, and emerging countermeasures, See: [http://www.basel.int/TheConvention/OpenedWorkingGroup\(OEWG\)/Meetings/OEWG12/Overview/tabid/8264/ctl/Download/mid/23551/Default.aspx?id=20&ObjID=23541](http://www.basel.int/TheConvention/OpenedWorkingGroup(OEWG)/Meetings/OEWG12/Overview/tabid/8264/ctl/Download/mid/23551/Default.aspx?id=20&ObjID=23541)

Additives	Purpose	Plastics	Common content
Hexabromocyclododecane (HBCD)	Flame retardants	EPS, XPS in insulation HIPS in EEE	0.7–2.5% (EPS, XPS) 1–7% (HIPS) (UNEP 2015)
Tetrabromodiphenyl ether	Flame retardant	as pentaBDE in PUR, former printed circuit boards	0.5–5% (UNEP 2017a)
Pentabromodiphenyl ether	Flame retardant		N/A
Hexabromodiphenyl ether	Flame retardant	as octaBDE in ABS, HIPS, PBT, PA	12–18% (UNEP 2017a)
Heptabromodiphenyl ether	Flame retardant		N/A
Decabromodiphenyl ether (DecaBDE)	Flame retardant	HIPS, PA, PO	5–16% (Buckens and Yang 2014)
Polybrominated biphenyls (PBBs)	Flame retardant Plasticiser	ABS, foams, textiles, appliances	10% (International Programme on Chemical Safety 1994)
Diethylhexylphthalate (DEHP)	Plasticiser	PVC	30% (European Chemicals Bureau 2007)



Legality of trade under Article 11

“Parties may enter into bilateral, multilateral, or regional **agreements or arrangements** regarding transboundary movement of hazardous wastes or other wastes with Parties or non-Parties” ¹

Certain conditions apply:

- Those agreements/arrangements must “not derogate from the environmentally sound management of hazardous wastes and other wastes as required by this Convention” .
- Those agreements /arrangements “shall stipulate provisions which are not less environmentally sound than those provided for by this Convention” .
- Those agreements cannot redefine the categories of covered waste identified in the Basel annexes.

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, see: <http://www.basel.int/TheConvention/Overview/TextoftheConvention/tabid/1275/Default.aspx>

Canada-US Agreement concerning the Transboundary Movement of Hazardous Waste and other waste (of 1986) ¹

Canada-US Arrangement concerning the environmentally sound management of non-hazardous waste and scrap subject to transboundary movement (of 2020) ²

Agreement of 1986:

- Controls transboundary movement and transit of hazardous waste and other waste
- Requires notification to importing and transit country
- Does not include new category of Plastic waste, including mixtures of such waste in the definition of "Other Waste"
- Takes ESM into account but does not encourage

Arrangement of 2020:

1. Arrangement of 2020 is complimentary to the one of 1986 and is applied to non-hazardous waste not included under Agreement of 1986;
2. Does not mention non-hazardous plastic waste under Annex II that requires PIC
3. Does not mention plastic waste that falls under Annex IX of the Basel Convention
4. Intends to apply ESM but includes recycling, recovery and disposal
5. Subject waste movement to "all existing controls normally applied in commercial transactions"
6. Claims to be non-legally binding thus cannot be enforced as the Convention

¹ [1. Transboundary movement of hazardous waste agreement: Canada and the United States - Canada.ca](#)

² [2. Transboundary movement of non-hazardous waste and scrap arrangement: Canada and the United States - Canada.ca](#)





Canada's initiative to ban SUP: A proposed integrated management approach to plastic products to prevent waste and pollution¹

Criteria for the characterizing single-use plastics:

1. Environmentally problematic
2. Value recovery problematic
3. Considerations for exemptions (essential function, no viable alternatives exist)

Certain single-use plastic items that meet the requirements of a ban or a restriction:

- plastic checkout bags
- stir sticks
- 6-pack rings
- cutlery
- straws
- food service ware made from problematic plastics



SAY NO TO PLASTIC

1. A proposed integrated management approach to plastic products: discussion paper <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/plastics-proposed-integrated-management-approach.html>

Challenges of plastic waste management to protect the Great Lakes Basin

1. Relevance of the plastic life-cycle.
2. Plastic pollution impacts water quality and ecosystem health – binational shared US-Canada responsibility to protect and restore the Great Lakes Basin.
3. Waste facilities operating on the border.
4. Shipment of pellets to the points of destination.
5. Air emissions.
6. Plastic spills.

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