Intergovernmental Negotiating Committee to develop an international legally binding instrument on plastic pollution, including in the marine environment

Ad hoc intersessional open-ended expert group to identify and analyse criteria and non criteria based approaches with regard to plastic products and chemicals of concern in plastic products, and product design focusing on recyclability and reusability of plastic products, considering their uses and applications

In-person meeting

Bangkok, 24-28 August 2024

Co-Chairs' Synthesis Document/rev.1

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I. Introduction

1. At its fourth session (INC-4), the Intergovernmental Negotiating Committee to develop an international legally binding instrument on plastic pollution, including in the marine environment (hereafter "the Committee"), established two ad hoc intersessional open-ended expert groups.

2. An ad hoc intersessional open-ended expert group was established and mandated to identify and analyze criteria and non criteria based approaches with regard to plastic products and chemicals of concern in plastic products, and product design focusing on recyclability and reusability of plastic products, considering their uses and applications, for the consideration by the committee at its fifth session (hereafter "Expert Group 2"). The Expert Group is co-chaired by Mr. Axel Borchmann of Germany, Ms. Gwen Sisior of Palau, and Mr. Luay Almukhtar of Iraq. Expert Group 2 started its work with two virtual meetings, on 18 and 30 July. As part of this work, an online questionnaire was addressed by the Co-Chairs to the experts nominated by Members to participate in the Group.[1]

3. As agreed by the Committee, the Expert Group is informed by the reports of the Co-Chairs of contact group one established at INC-4 and the compilation document of the draft text[2] (hereafter the "draft text compilation"). The outcomes from the expert group shall be without prejudice to the Members' national positions and the outcome of negotiations conducted by the Committee.

4. This document aims to provide relevant information to inform and help further advance the Expert Group's mandated work. Specifically, it sets out a synthesis of information collated by the Co-Chairs to support and facilitate the work of the Expert Group during its in-person meeting, scheduled to take place in Bangkok from 24 to 28 August 2024. It is informed by the responses received to the Co-Chairs' online questionnaire and by discussions during the Expert Group's virtual meetings.[3] Revisions to the earlier version of this document are intended to take account of the inputs of experts at the third virtual meeting.

5. The synthesis below is structured as follows:

II. General considerations
III. Criteria and non criteria based approaches for plastic products, considering their uses and applications
IV. Criteria and non criteria based approaches for chemicals of concern in plastic products, considering their uses and applications
V. Criteria and non criteria based approaches for product design, focusing on recyclability and reusability, considering their uses and applications
VI. Interlinkages with provisions of the draft text compilation
VII. Concluding remarks.

6. Section II contains general cross-cutting considerations. Sections III to V contain a preliminary overview of the inputs of experts to date, including responses to the questionnaire, relating to matters within the Expert Group's mandate with respect to, respectively, plastic products (section III), chemicals of concern in plastics products (section IV) and product design, focusing on reusability and recyclability (section V). This preliminary overview prepared by the Co-Chairs is intended to provide a high-level overview of: (i) discussions in the virtual meetings; and (ii) the responses to the online questionnaire submitted by experts. Sections III to V each include an overview of relevant elements in the draft text compilation, for context only..

7. The Expert Group's further work will be supported also by a series of guiding questions related to these three sections to gather views and inputs, aiming to help structure comprehensive and informed discussions and build a common understanding on the topics. These guiding questions are included in the agenda for the in-person meeting that will take place in Bangkok, Thailand, from 24 to 28 August 2024.

[1] See concept note and work programme available at: https://www.unep.org/inc-plastic-pollution/ioeeg
[2] English advance version available at https://wedocs.unep.org/bitstream/handle/20.500.11822/45858/Compilation_Text.pdf
[3] 269 nominated experts from 101 Members of the INC participated in the first virtual meeting; 278 nominated experts from 103 Members of the INC participated in the second virtual meeting, and 261 experts from 106 Members of the INC participated in the third virtual meeting.

8. After the in-person meeting in Bangkok, the Co-Chairs will prepare a report consolidating the collective inputs, insights and analysis of the Expert Group, for the consideration by the Committee at its fifth session, INC-5, scheduled to take place in Busan, Republic of Korea, from 25 November to 1 December 2024.[4]

II. General considerations

9. A number of cross-cutting considerations of general relevance to the Expert Group's work can be noted at the outset.

10. It was emphasized at the start of the Expert Group's work that it is of a technical nature and is intended to inform the work of the Committee, without prejudging it, as agreed by the Committee. The work of the Expert Group is also to be informed by the draft text compilation. The discussion in the Expert Group of possible approaches to plastic products, chemicals of concern in plastic products, and product design for reusability and recyclability, is, therefore, understood to be without prejudice to the preference of some Members of the Committee for not including in the text of the instrument specific provisions with respect to one or more of these aspects, as reflected through options to that effect ("Option 0") in the draft text compilation.

11. In the Group's initial discussions and in responses to the online questionnaire, clarification was sought on the meaning of the terms "non criteria based approaches" in the mandate of the Expert Group. Examples of such approaches were provided through responses to the questionnaire.

12. It was suggested that in the consideration of approaches, with regard to the matters within the Expert Group's mandate, consideration be given to the limited time available for the conclusion of the negotiation by the INC. This includes with respect to what elements might be addressed in the text of the instrument and what could be left for later determination, including possible mechanisms and processes to accommodate future evolutions with regard to the matters under discussion in the Expert Group in a dynamic manner over time.

13. A number of other considerations of potential relevance to all parts of Expert Group 2's mandate have also been identified in discussions to date and in experts' responses to the online questionnaire. These include:

a. Building on and avoiding duplication with existing efforts under other MEAs;
b. Applying a science- and evidence-based approach;
c. Possibility to evolve and review provisions, including through an expert/scientific panel;
d. Establishing a mechanism/process for progressive development of, e.g., guidance;
e. Ensuring transparency and facilitating monitoring;
f. Levelling the playing field for industry by global standards;
g. Applying the polluter pays principle, including extended producer responsibility;
h. Avoiding transboundary issues due to differences in criteria or standards applied and unnecessary obstacles to trade;
i. Ensuring availability, affordability, accessibility, feasibility of safe and environmentally sound alternatives or substitutes and avoidance of regrettable substitutions; and
j. Considering existing national measures, national circumstances and capabilities, including with regard to waste management capacity and infrastructure, socio-economic and environmental impacts.

III. Identification and preliminary analysis of criteria and non criteria based approaches for plastic products, considering their uses and applications

A. Introduction

14. An overview of the approaches identified by experts through the work of the Expert Group to date is provided in section C below. This overview is based on the experts' responses to the questionnaire and takes account also of inputs received at the virtual meetings of the Expert Group. It is solely intended to facilitate the conduct of the Expert Group's further work, which will be informed also by the further inputs of all experts and further discussions at the in-person meeting. The full text of the questionnaire responses is contained in the

[4] More information available at https://www.unep.org/inc-plastic-pollution/session-5

compilation of questionnaire responses, and a more detailed summary of the experts' responses to the questionnaire is also contained in Appendix B.

15. An overview of relevant elements of the draft text compilation, which informs the Expert Group, is provided in section B below, for context only. This is not proposed as basis for discussion by the Expert Group.

B. Overview of relevant elements in the draft text compilation

16. In the draft text compilation, element II.3 addresses plastic products[5] and contains two sub-headers, one focusing on problematic (and avoidable) plastic products, and the other on microplastics and/or products containing microplastics.[6]

17. With respect to problematic (and avoidable) products[7], three options are set out, including an Option 0 (i.e., an option not to include this provision in the text of the instrument) as well as two text-based options (Options 1 and 2), each with square brackets.

18. Within Option 1, different potential parameters and modalities are envisaged for the identification of plastic products identified as problematic or problematic and avoidable, based on a range of possible parameters, with a view to addressing their use, whether as defined in the instrument or on a basis to be nationally determined. Specifically, possible approaches include:

- Different possible approaches to the **identification of products**, whether at the national level, within the instrument, or by its governing body, including a potential annex to the instrument containing one or more lists of specific products, and/or criteria to be used for the identification of problematic or problematic and avoidable products.[8] Table 1 below reproduces elements identified in the draft text as possible basis for identifying products as problematic, or problematic and avoidable. The draft text compilation also includes elements for the development of related annexes, which are reproduced in Appendix A of this document for ease of reference.

- Different possible approaches for the **determination of the control measures to be applied** to the products at issue, and potential timeframes for their implementation, whether in the text of the provision, in an annex, and/or at the national level. Such measures could include regulating, reducing, restricting, not allowing, and/or phasing out the use of such plastic products.

- The possible adoption of a **process for the listing of problematic and avoidable products, and problematic products,** in an annex to the instrument, including assessments by an expert committee of proposals to list a product, using criteria to be contained in an annex, and a consideration by the governing body of any recommendations by the expert committee.[9]

- The possible development of **guidance** to inform the efforts of parties and/or assist in the implementation of this provision, possibly taking into account any guidance and criteria developed under the proposed separate provision on product design, composition and performance (element II.5).[10]

19. Under Option 2, parties would be encouraged to adopt measures to regulate the use of problematic and avoidable plastic products, with an emphasis on plastic products with a high risk of environmental leakage, identified on the basis of **guidelines to be adopted by the governing body**.[11]

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[5] The full title of draft element II. 3 is [[Problematic [plastic products] [and avoidable] [Single-use] plastic products] [[and groups of such products]], [[including] [short-lived] and single-use plastic products] [[and [microplastics on their own and] [products containing] intentionally added] microplastics]] [in plastics and plastic products]].
[6] UNEP/PP/INC.5/4, pp. 16 to 18.
[7] The full title of draft element II.3, sub-header a., is ": [[Problematic [plastic products] and avoidable plastic products] [[and groups of such products], [[including] [short-lived] and single-use plastic products]]].
[8] See draft text compilation, element II.3, Option 1, para.1, at p. 17.
[9] See draft text compilation, element "3bis Listing a product in Part II of Annex B [Problematic and avoidable plastic products] and Part II of Annex B [Problematic plastic products]", at p. 18. The expert committee would also develop guidance for the consideration of the governing body on how a Party could apply the criteria in the annex to apply additional measures and make recommendations to the governing body on possible amendments to the annex.
[10] See draft text compilation, element II.3, Option 1, para. 2, at p. 17. See also the reference to draft provision II.5 in OP1 bis. A proposal for the placement of this provision to be moved to element II.5 is also reflected in the header of element II.3.
[11] See draft text compilation, element II.3, Option 2, para. 1, p. 18.

20. **Table 1** below contains an overview of the possible parameters and modalities to identify products as problematic, or problematic and avoidable, in draft element II.3 of the draft text compilation.

Table 1 – Overview of potential elements for the determination of problematic, or problematic and avoidable, products, as contained in element II.3. a. of the draft text compilation

Potential elements for the identification of problematic or problematic and avoidable products include the following:

- High risk of environmental leakage and contribution to plastic pollution, especially in the marine environment
- Likelihood of harm to human health or the environment
- Properties that may hinder safe and environmentally sound management, including their reusability, repairability, recyclability and disposability
- Short-lived, single-use products
- Criteria based on safety, sustainability, essentiality and transparency
- Listing under the provisions of the Stockholm convention on Persistent Organic Pollutants
- Technical, social and economic feasibility, accessibility, affordability, availability of alternatives or substitutes, and their environmental and health implications

Potential processes and modalities for the identification of problematic or problematic and avoidable plastic products include the following (some of which could operate in combination):

- List(s) of products in an annex
- Criteria in an annex, to be used for determinations by an expert committee or at the national level
- Recommendations by an expert committee
- Guidelines to be adopted by the governing body
- National determination

See also related potential annexes, as contained in Appendix 2 of the draft text compilation.

21. In addition, three options are set out in the draft text under element II.3 with respect to microplastics and/or **products containing microplastics**: an option to not include a provision on this matter (Option 0), a text-based option (Option 1),[12] and an option to merge this with the separate draft provision on unintentional releases of microplastics (Option 2).[13] The draft text compilation also includes a further option for text to address micro- and nanoplastics (element II.3 *bis alt*).[14]

22. Element II.13*bis* in the draft text compilation[15] further envisages each Party taking measures at all stages of the plastic life cycle, including reducing plastic use through proper treatment of **problematic avoidable plastic products**, including intentionally added microplastics, and **reducing single-use plastics.**[16] Element 4*bis* envisages the adoption of dedicated sectoral Programmes of Work.[17]

C. Overview of possible approaches identified

23. This section contains a preliminary overview and synthesis of the approaches identified by experts during the virtual meetings of the Expert Group and in their questionnaire responses. A more detailed summary of the responses to the questionnaire, including information on national approaches, possible control and implementation measures, and possible processes for the identification and/or listing of plastic products, is available in Part B of Appendix B of this document.

[12] Under option 1, different possible approaches are reflected, including: possible restrictions on the use of microplastics and/or products containing intentionally added microplastics (based on elements to be contained in an annex with possible exceptions); nationally determined control measures on the use and/or manufacture of products containing intentionally added microplastics; or an encouragement for parties to identify products containing intentionally added microplastics and assess associated risks, to be followed by a phased reduction or elimination.
[13] See draft text compilation, element II.3, sub-header b. ("[Products containing] [Microplastics on their own and] [Intentionally added microplastics [in plastics and plastic products]"), at p. 18.
[14] See draft text compilation, element [II.3bis alt Micro- and [nanoplastics]], at p. 19). This element includes possible text for the promotion of research on leakages of microplastics across the lifecycle of plastics and/or plastic products and their impacts on ecosystems, reduction of emissions and/or releases of microplastics, monitoring and reporting of leakage of microplastics, and infrastructure and research funding. Under this element, there is also an Option 0 (i.e. an option not to have the provision).
[15] See "Overarching provision related to Part II", draft text compilation, element II.13 *bis,* at p. 40.
[16] See draft text compilation, potential Annex [X], .
[17] See draft text compilation, element II.4*bis*, at p. 20.

24. In the online questionnaire addressed to them, nominated experts were invited to identify criteria, types of criteria or non criteria based approaches that could be reflected in the instrument for the identification/classification of plastic products, as well as any specific uses and applications for which such approaches are particularly applicable or relevant. In addition, at the second virtual meeting of the Expert Group, experts were invited to address what characterizes effective criteria and non criteria based approaches for plastic products.[18]

25. In their responses to the questionnaire and in addressing the guiding question during the second virtual meeting, the experts identified a number of possible criteria and non criteria based approaches to the identification/classification of plastic products, with reference to different possible levels of intervention and obligation.

26. Overall, possible types of approaches referred to for the identification/classification of plastics products generally fall broadly under the following categories, some of which could apply in combination:

a. **Criteria** for the identification of problematic and avoidable plastic products;
b. **Lists of problematic and avoidable plastic products** identified, with potential timeframes for action to address them;
c. **A process for the identification and listing** of problematic and avoidable products, possibly through a scientific/technical body;
d. **Guidelines** to inform and guide the efforts of parties;
e. **Context-specific approaches, including national level determinations**, taking into account national circumstances and capabilities.

27. To facilitate a structured discussion during the in-person meeting, the overview of experts' inputs below is presented with reference to the possible types of approaches above, without prejudice to any Member's national positions and the outcome of negotiations conducted by the Committee, and without prejudice to the level of intervention or of obligation at which the identified approaches might be used or applied.

28. With respect to **criteria** for the identification of plastic products, a synthesis of possible approaches identified by experts is provided in **Table 2** below. For ease of reference, potential criteria identified are presented in **Table 2** with reference to groups of criteria based approaches. **Appendix B** includes more detailed information on criteria and criteria based approaches to the identification and/or classification of plastic products identified in the experts' responses to the questionnaire.

29. **Lists of problematic and/or avoidable plastic products** could be developed at the national or global level by applying one or more of the identified criteria.

Table 2. Overview of expert identified criteria based approaches to the classification and/or identification of plastic products identified in questionnaire responses

Potential criteria based approach	Groups of criteria identified for inclusion
Problematic plastic products/ plastic products of concern defined by criteria	- Adverse impacts on human health or environment - Durability / utility - Circularity - Material composition - End-of-Life Pathways
Avoidable plastic products defined by criteria	- Essentiality - Available design alternatives - Available and affordable alternatives - Avoidance of regrettable substitution
Decision tree/hierarchy approach	- Ranked flow of questions based on the waste hierarchy (i.e. prevention, resource efficiency, reuse, recycling, recovery, including energy recovery, landfill, and controlled disposal)

[18] See Expert Group 2 Work programme, p. 3.

Potential criteria based approach	Groups of criteria identified for inclusion
Decision tree approach	- Essentiality - Societal value, e.g., enabling energy transition or climate goals. - Availability of better alternatives, alternative practices and designs, and the availability of non-plastic substitutes.
Decision hierarchy approach	- Hazards - Emission generation - Impediments to circularity - Transparency

30. Questionnaire responses addressed potential criteria for identifying products for regulation, reduction or elimination, at the national or global level. A distinction was made between problematic and avoidable plastic products, whereby products that are problematic *and* avoidable could be subject to regulation, restriction or reduction measures, whereas products that are problematic *but not* avoidable could be subject to redesign to address and limit properties considered problematic. Products that do not fall under either category would not be subject to measures. Alternatively, the criteria for problematic and avoidable products could be merged to a single category to identify/classify products.

31. Several dimensions were identified in the responses as relevant for the selection of criteria and the development of any potential control measures. These include:

Criteria design

a. Inclusion or exclusion criteria
b. Cumulative or non-cumulative criteria (i.e., meeting one or all identified criteria to qualify for inclusion or exclusion)
c. The number and complexity of criteria
d. Quantitative or qualitative assessments

Process and level of intervention

e. Voluntary or mandatory measures
f. Global or national level
g. Stepwise approach to listings (candidate list – final list) or one-step approach (final list)
h. Fixed criteria or scope to update criteria with new knowledge and information
i. Role of subsidiary bodies / process for listings.

Instrument design

j. Placement: Criteria in text of instrument or in annexes
k. Timing: Decision on criteria in initial text or at a later meeting of the governing body

32. A number of possible **non criteria based** approaches were identified by experts in their questionnaire responses. Some of the elements identified in this context overlap with elements already identified above. **Table 3** below lists only additional elements not previously identified above, to avoid duplication.

Table 3: Overview of additional elements identified by experts as types of non criteria based approaches to the identification/classification of plastic products identified in the questionnaire responses

Approach	Description
Context-specific approaches – National level identification	Context-specific approaches implemented through national plans, allowing countries to tailor their strategies to their circumstances and capacities.

Approach	Description
	Identification of problematic products at national level to allow accounting for national circumstances (e.g. alternatives, consumption patterns, waste management systems)
Lists created without the use of criteria	Lists based on the activities and initiatives already undertaken in the public and/or private sector to move away from certain plastic products, or nomination of products by Parties. An example could be the Rotterdam Convention mechanism for establishing global lists based on national regulatory action.
Stakeholder Engagement	Involving stakeholders (e.g., industry, NGOs, local communities) in monitoring and reporting plastic pollution. Incorporating input from various stakeholders, including industry experts, environmental organizations, and policymakers, lead to a more holistic approach. This engagement ensures that the criteria reflect practical realities and challenges faced in the management of plastic products.
Market Trends Analysis	Observing market dynamics and consumer behavior regarding plastic usage and disposal.
Innovation Tracking	Monitoring advancements in material science that lead to new types of biodegradable or alternative plastics.
Cultural Contexts	Recognizing how cultural attitudes towards plastic usage influence classification systems.

33. Priority uses and applications were identified, for which problematic and avoidable plastics products can be identified. Some uses and applications were also identified, that may be subject to transition periods, exceptions or exemptions from the instrument as a whole or from control measures at this stage. The following uses or applications were identified, for which specific criteria or non criteria based approaches were considered relevant:

a. Food packaging and food contact plastics
b. Packaging
c. Medical devices and medical sector / healthcare sector
d. Agricultural plastics
e. Electronics
f. Automotive plastics
g. Fishing gear
h. Textiles
i. Single use items
j. Construction materials
k. Food and beverage sector
l. Toys and children's toys
m. Childcare products
n. Personal care products
o. Retail industry.

34. Some uses and applications of plastic products were identified as essential, in the medical field, in pharmaceutical, sanitary and hygienic products, transport, communications, emergency transportation, water and food security, and during emergencies and natural disasters. There was limited overlap in the expert responses between sectors identified as possible priority and sectors in which essential uses were identified. Blanket exemptions were discouraged.

35. See **Appendix B** (Part B.5), for further information on criteria and non criteria based approaches for specific uses and applications contained in responses to the online questionnaire.

IV. Identification and preliminary analysis of criteria and non criteria based approaches for chemicals of concern in plastic products, considering their uses and applications

A. Introduction

36. An overview of the approaches identified by experts through the work of the Expert Group to date is provided below. This overview is based on the experts' responses to the questionnaire and takes account also of inputs received also at the virtual meetings of the Expert Group. It is solely intended to facilitate the conduct of the Expert Group's further work, which will be informed also by the further inputs of all experts and by further discussions at the in-person meeting. The full text of the questionnaire responses is contained in the compilation, and a more detailed summary of the responses is also contained in Appendix B.

37. An overview of relevant elements of the compilation of draft text document, which informs the work of the Expert Group, is provided in section B below, for context only. It is not proposed as basis for discussion by the Expert Group.

B. Overview of relevant elements in the draft text compilation

38. With respect to chemicals of concern in plastic products, draft element II.2[19] contains an option 0, for no provision to be included in the text of the instrument, as well as a text-based option 1.

39. Under option 1, a range of possible approaches is reflected, for the potential adoption by Parties of control measures on the use of chemicals of concern in plastics and/or plastic products. .[20]

40. Alternative approaches identified include the adoption by each Party of **measures consistent with its regulatory frameworks and processes, and based on scientific evidence**, to identify and/or test, evaluate, prioritize, manage, prohibit or regulate chemicals used in plastic products or production that present a risk or concern to, or adverse effect on, human health and the environment.[21] This could include the use of **maximum permissible values** based on criteria to be contained in an annex to the instrument.[22] Reference is also made to the avoidance of unnecessary obstacles to trade.[23]

41. A range of potential measures is also proposed to address **situations of permitted use** of chemicals of concern and/or plastics containing them,[24] including:

- measures to **reduce or prevent exposure, release or leakage**;
- measures to **use them consistently with an annex** to the instrument, and/or **manage** them in an **environmentally sound manner**;
- the provision by producers, exporters and/or importers of **information about associated hazards or impacts** to human health or the environment and related implications, possibly based on **harmonized requirements** to be contained in an annex to the instrument;
- **marking and labelling**, possibly based on harmonized requirements to be contained in an annex to the instrument, and/or based on **guidelines** to be adopted by the governing body consistent with **existing global standards**; and/or
- measures to prevent the presence of **non-intentionally added substances**, unreacted monomers and unintentionally formed impurities in plastics and plastic products, to be listed in an annex to the instrument.

[19] The full title of II.2is [Cooperation and coordination with relevant MEAS on] [[Chemicals [and polymers] of concern [in [plastics and] plastic products]].
[20] See draft text compilation, element II.2, Option 1, para. 1, at p. 14.
[21] See draft text compilation, element II.2, Option 1, paras. OP1 *alt*, OP1 *alt bis*, OP1 *alt ter*, and OP1 *alt 2*, at pp. 14 and 15.
[22] See draft text compilation, element II.2, Option 1, para. OP1 *alt 2*, at p. 15. See also the reference to "scientifically established maximum permissible concentrations" in OP1 *alt*, at p. 15.
[23] See draft text compilation, element II.2, Option 1, paras. OP1 *alt* and OP1 *alt ter*, at pp. 14 and 15.
[24] See draft text compilation, element II.2, Option 1, para. 2, at p. 15.

42. It is further proposed that Parties be encouraged to take measures to ensure that any use and waste management of plastic products containing chemicals identified as being of concern be carried out so as to **prevent and minimize human exposure or release** into the environment.[25]

43. The establishment of Science, Technology and Economics Panels (STEPs) is also proposed, which would recommend to the governing body, inter alia, a **list of characteristics of hazardous, problematic and avoidable chemicals, polymers or plastic products**,[26] and could also recommend at each session associated targets and timelines.[27]

44. It is further proposed that each Party be encouraged to include in its **reporting** any measures taken to restrict, regulate or prohibit the presence of chemicals or groups of chemicals with a potential for adverse impacts on human health or the environment or that hinder their (safe and) environmentally sound management,[28] and that any new chemical of concern identified under the first paragraph be prohibited under the relevant chemicals convention.[29]

45. Element II.13*bis*[30] includes the proposed adoption by Parties of measures at the production stage, including **proper treatment of chemicals of concern.**[31] Element 4*bis* envisages the adoption of dedicated sectoral Programmes of Work.[32]

C. Overview of possible approaches identified

46. This section contains a preliminary overview of criteria and non criteria based approaches identified during the virtual meetings of the Expert Group and in experts' questionnaire responses, for the identification of chemicals of concern in plastic products. A more detailed summary of the responses to the questionnaire, including information on national approaches, possible control and implementation measures, and possible processes for the identification and/or listing of chemicals of concern in plastic products, is available in Appendix B of this document.

47. In the online questionnaire addressed to them, nominated experts were invited to identify criteria and non criteria based approaches to the identification and/or classification of chemicals of concern in plastic products, as well as uses and applications for which such approaches may be particularly relevant. The experts were further invited to identify interrelations between element II.2 and other elements of the draft text compilation. In addition, at the second virtual meeting of the Expert Group, experts were invited to address "What characterizes effective criteria and non criteria based approaches to chemicals of concern in plastic products".

48. In their responses to the questionnaire and in addressing the guiding question during the second virtual meeting, the experts identified a number of possible criteria and non criteria based approaches to chemicals of concern in plastics, with reference to different possible levels of intervention and obligation.

49. Overall, possible types of approaches referred to generally fall broadly under the following categories, some of which could apply in combination:

a. **Science-based criteria for** the **identification** of chemicals of concern in plastic products;
b. **A list of chemicals or groups of chemicals** of concern (positive sector-specific list or negative list);
c. Reliance and/or building on **measures, lists and mechanisms in existing instruments**;
d. **Measures for permitted production and/or use** of chemicals of concern in plastic products and/or plastics containing them; and/or
e. **Context-specific approaches, including national level determinations,** taking into account national circumstances and capabilities.

[25] See draft text compilation, element II.2, Option 1, para. OP2 *alt*, at p. 16.
[26] See draft text compilation, element II.2, Option 1, para. OP3 *supra*, at p. 16.
[27] See draft text compilation, element II.2, Option 1, para. OP5 *bis*, at p. 16.
[28] See draft text compilation, element II.2, Option 1, para. 3, at p. 16.
[29] See draft text compilation, element II.2, Option 1, para. 4, at p. 16.
[30] See "Overarching provision related to Part II", draft text compilation, element II.13*bis,* at p. 40.
[31] see draft text compilation, potential Annex [X], 2.a.ii.
[32] See draft text compilation, element II.4*bis*, at p. 20.

50. To facilitate a structured discussion during the in-person meeting, an overview of experts' inputs is presented below with reference to the types of approaches above, without prejudice to any Member's national positions and the outcome of negotiations conducted by the Committee, and without prejudice to the level of intervention or of obligation at which the identified criteria or criteria based approaches might be used or applied. A more detailed summary of the responses to the questionnaire is contained in Appendix B.

51. Possible **criteria** identified for the identification and/or classification of chemicals of concern in plastic products are synthesized in **Table 4** below.

Table 4. Overview of expert identified types of criteria and specific criteria for the classification/ identification of chemicals of concern in plastic products identified in the questionnaire responses

Types of criteria	Specific criteria
Risk-based criteria[33]	Toxicity Exposure level (in specific exposure scenarios) Likelihood of release
Hazard-based criteria[34]	Carcinogenicity Mutagenicity Reproductive/developmental toxicity Respiratory sensitization Mobility in the environment (air, water, biota, etc.)/migration Respiratory and skin sensitizer Hazardous to the aquatic environment Equivalent Level of Concern to CMR, PBT, vPvB (or any wording referring to the same concept) Persistent, bioaccumulative and toxic (PBT) Very persistent and very accumulative (vPvB) Specific target organ toxicity Carcinogenic, mutagenic, or toxic for reproduction (CMR) Toxicity Persistence in the environment Bioaccumulation potential Endocrine disruption Terrestrial and aquatic toxicities
Exposure-based criteria[35]	Likelihood of leaching from plastics Presence, use, or release from specific polymer types Potential for environmental release Human exposure routes (e.g., dermal contact, ingestion) Exposure potential based on uses Usage patterns Release potential / mechanisms Total registered volumes Population vulnerability Disproportionate degree of impacts of such chemicals of concern (in and of themselves as well as in terms of their development/production) on Indigenous Peoples, local communities, and their traditional terrestrial and maritime territories. Exposure Potential

[33] Questionnaire responses refer to the following reference Raubenheimer, K. and Urho, N., 2024. *Global criteria to address problematic, unnecessary and avoidable plastic products*. Copenhagen: Nordic Council of Ministers.

[34] Questionnaire responses refer to the following references UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS); https://unece.org/DAM/trans/danger/publi/ghs/ghs_rev04/Spanish/ST-SG-AC10-30-Rev4sp.pdf; https://www.genevaenvironmentnetwork.org/events/road-to-busan-potential-approaches-to-plastic-products-and-chemicals-of-concern-in-the-plastics-treaty/; Raubenheimer, K. and Urho, N., 2024. *Global criteria to address problematic, unnecessary and avoidable plastic products*. Copenhagen: Nordic Council of Ministers.

[35] Questionnaire responses refer to the following reference OECD. (2019). Guiding Principles and Key Elements for Establishing a Weight of Evidence for Chemical Assessment

Types of criteria	Specific criteria
Regulatory status/compliance criteria[36]	Chemicals already restricted or banned in certain jurisdictions Chemicals on various "watch lists" or "substances of very high concern" lists Compliance with International Agreements; Compliance with existing laws / regulations Adoption of national standards; Global Standards
Functional grouping criteria[37]	Plasticizers Flame retardants UV stabilizers Colorants Performance requirements
Concentration-based criteria[38]	Threshold levels for specific chemicals or chemical groups
Circularity criteria	The chemical hinders or disrupts the circularity of a plastic product or products (e.g., making the product(s) unable to be reused or recycled in practice and at scale) in ways that protect the environment and human health).
Hazardous to ozone layer / climate impacts	- Ozone depleting chemicals - Chemicals with clear global warming potential

52. In their responses, experts further identified several dimensions relevant to possible approaches to the identification/classification of chemicals of concern in plastic products:

a. Risk vs. hazard-based approaches
b. Cumulative or non-cumulative criteria
c. Positive vs negative lists
d. Quantitative or qualitative criteria
e. Differentiation between industrial and non-industrial uses
f. Availability of alternatives
g. Socioeconomic impacts
h. Consideration of full life cycle.

53. A number of additional considerations relating to criteria and non criteria based approaches to chemicals of concern in plastic products were identified, including:

a. Linkages to existing chemicals management frameworks
b. Need for shared understanding of terms
c. Level of obligation
d. National circumstances vs. global approaches
e. Role of any potential subsidiary bodies
f. Ensuring a transparent, balanced and inclusive processes.

54. The importance of **avoiding duplication of existing efforts and linking to them** was noted. Existing instruments and approaches were referred to as examples for the development of criteria based approaches under the future instrument and/or as examples of instruments already addressing some of the chemicals of concern in plastic products. Cited instruments and approaches include the Stockholm Convention on Persistent Organic Pollutants, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Globally Harmonized System of Classification and Labelling of

[36] Questionnaire responses refer to the following reference European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern
[37] Questionnaire responses refer to the following reference Hahladakis, J. N., et al. (2018). An overview of chemical additives present in plastics: Migration, release, fate and environmental impact during their use, disposal and recycling. Journal of Hazardous Materials, 344, 179-199.
[38] Questionnaire responses refer to the following reference EU Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Chemicals (GHS), the Basel Convention and REACH approaches.[39] A list of existing or proposed instruments and approaches referred to in questionnaire responses is contained in paragraph 28 in Appendix B.

55. **Additional non criteria based approaches** for the identification/classification of chemicals of concern in plastic products identified include:

a. Green chemistry approach
b. Adaptive management approach
c. Case-by-case assessment
d. Multistakeholder involvement
e. Emerging technologies
f. Maximum permissible concentration levels
g. Reliance on existing international chemicals management systems.

56. Experts identified **existing approaches** that could either be directly utilized or adapted, pointing to Annexes E and F of the Stockholm Convention on Persistent Organic Pollutants ("Stockholm Convention") as examples of utilizing risk assessments for specific uses and applications after identification of chemicals of concern using screening criteria. This approach includes exposure assessments and considerations of socioeconomic impacts, including assessments of alternatives, to inform possible control measures. Others pointed to REACH and the Basel Convention as relevant to consider.

57. Respondents expressed that all **uses and applications** should be addressed, noting that if there is a need to prioritize, priority should be considered for uses and applications of plastic products that have a high likelihood in resulting in human or environmental exposures to chemicals of concern, or that are otherwise considered sensitive. Experts identified specific uses/applications that could be exempted from potential criteria or non criteria based approaches, such as the medical and military sectors.

58. Uses or applications identified, for which specific criteria or non criteria based approaches to chemicals of concern in plastic products may be particularly relevant, including as potential priority areas, include the following:

a. Food packaging / Food contact materials / Food and beverage packaging
b. Packaging
c. Storage and transportation of potable water
d. Children's toys and childcare articles
e. Medical devices
f. Pharmaceuticals
g. Electronics / electric and electronic components
h. Automotive plastics / parts
i. Agricultural plastics
j. Textiles and clothing
k. Recycled plastics
l. Hygiene and personal care products
m. Military sector
n. Construction materials
o. Waste management industries
p. Heat resistant materials
q. Tyres
r. Artificial turf
s. Consumer goods / household goods
t. Industrial plastics
u. Marine equipment.

[39] See Appendix B for an overview of selected MEAs and international policy instruments. See also Appendix B, p. 19, for a full list of the instruments identified in experts' questionnaire responses.

V. Identification and preliminary analysis of criteria and non criteria based approaches for product design, focusing on recyclability and reusability, considering their uses and applications

A. Introduction

59. An overview of the approaches identified by experts through the work of the Expert Group to date with regard to plastic product design, focusing on reusability and recyclability, is provided in section C below. This overview is based on the experts' responses to the questionnaire and takes into account inputs received also at the virtual meetings of the Expert Group. It is solely intended to facilitate the conduct of the Expert Group's further work, which will also be informed by the further inputs of all experts and further discussions at the in-person meeting. The full text of the questionnaire responses is contained in the compilation, and a more detailed summary of the responses is also contained in Appendix B.

60. An overview of relevant elements of the compilation of draft text document is also provided in section B below, for context only. It is not proposed as basis for discussion by the Expert Group.

B. Overview of relevant elements in the draft text compilation

61. Product design, composition and performance are addressed in element II.5 of the draft text compilation.[40] This draft provision includes four sub-headers: product design and performance (a)[41]; reuse, recycling and other aspects, including "circularity approaches" (b)[42]; use of recycled plastic products (c)[43]; and alternative plastics and plastic products (d).[44]

62. The sub-header on product (design and) performance includes two text-based options (1 and 2), in addition to an option 0, for no text.

63. Option 1 envisages each party being required or encouraged to take **measures to improve and/or promote the performance, design or composition of plastic products**. A range of possible objectives of such measures is identified, including reducing demand for and/or use of, *inter alia*, plastic products and associated chemicals of concern (see section III above),[45] increasing the circularity of plastic products and related characteristics, including reusability and recyclability,[46] and/or minimizing releases from plastic products.[47]

64. In this context, the possibility of the governing body adopting **standards and guidelines, including sector- and product-specific standards or guidelines** is envisaged, which could take into account relevant international standards and guidelines, including relevant sector- or product-specific standards or guidelines.

65. **Performance and/or design requirements** or criteria, including to increase the recyclability and reusability of plastics products, are also proposed, either to be contained in an annex (possibly taking into account **guidelines** to be established by the governing body)[48] or adopted at the national level, possibly in accordance with **elements** to be contained in an annex, taking into account **relevant international standards and guidelines**.[49] Under both approaches, the establishment and maintenance of **certification procedures and labelling requirements** is also envisaged.[50]

66. Additional possible actions include **public procurement** policies or **guidelines** to enhance circularity of plastic products, promoting the use of **environmental performance standards**, support for **voluntary certification schemes**,[51] and **cooperation towards the development of standards and guidelines at the multilateral level**.[52]

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[40] See draft text compilation, element II.5.a., at p. 21.
[41] See draft text compilation, element II.5.a., at p. 21.
[42] See draft text compilation, element II.5.a., at p. 23.
[43] See draft text compilation, element II.5.a., at p. 24.
[44] See draft text compilation, element II.5.a., at p. 25.
[45] See draft text compilation, element II.5.a., option 1, para. 1. (a.).
[46] See draft text compilation, element II.5.a., option 1, para. 1. (b. and b. *bis*).
[47] See draft text compilation, element II.5.a., option 1, para. 1. (c.).
[48] See draft text compilation, element II.5.a., option 1, sub-option 1, para. 2.
[49] See draft text compilation, element II.5.a., option 1, sub-option 2, para. 2.
[50] See draft text compilation, element II.5.a., option 1, sub-option 1, para. 3 and sub-option 2, para 3.
[51] See draft text compilation, element II.5.a., option 1, sub-option 2, OP2 *alt*.
[52] See draft text compilation, element II.5.a., option 1, provision common to sub-options 1 and 2, para. 4.

67. Option 2 would entail each Party taking measures to **enhance the design of plastic products** based on its national circumstances and capabilities, including to increase their reusability and recyclability, as relevant, taking into account **relevant international standards** and guidelines. [53]

68. Element II.13*bis* ("Overarching provision related to Part II")[54] includes the proposed adoption by Parties of measures at the production stage including **sustainable product design and performance criteria.**[55] Element 4*bis* envisages the adoption of dedicated sectoral Programmes of Work.[56]

C. Overview of possible approaches identified

69. This section contains a preliminary overview of criteria and non criteria based approaches to product design, focusing on reusability and recyclability, identified during the virtual meetings of the Expert Group and in questionnaire responses. A more detailed summary of the responses to the questionnaire, including additional information on national approaches and potential control and/or implementation measures, is available in Appendix B of this document.

70. In the online questionnaire addressed to them, nominated experts were invited to identify criteria and non criteria based approaches to the design of plastic products to improve the reusability of plastic products and to improving the quality of reuse systems, as well as to the design of plastic products to improve their recyclability, and the quality of recycled products. The experts were further invited to identify interrelations between element II.5 and other elements of the draft text compilation. In addition, at the second virtual meeting of the Expert Group, experts were invited to address "what characterizes effective criteria and non criteria based approaches to the design of plastic products, focusing on reusability and recyclability".

71. In their responses to the questionnaire and in addressing the guiding question during the second virtual meeting, the experts identified a number of possible criteria and non criteria based approaches to designing plastic products, focusing on reusability and recyclability, with reference to possible levels of intervention and obligation.

72. Overall, possible types of approaches identified generally fall broadly under the following categories, some of which could apply in combination:

a. Harmonized **standards** (including labelling) and/or **guidelines or best practices**;
b. Performance and/or **design criteria**;
c. Reuse, recycled contents and/or recycling **targets;**
d. **Context-specific approaches, including national level determinations**, taking into account national circumstances and capabilities.

73. To facilitate a structured discussion during the in-person meeting, the overview below is presented with reference to the types of potential approaches identified above, without prejudice to any Member's national positions and the outcome of negotiations conducted by the Committee, and without prejudice to the level of intervention or of obligation at which the identified approaches might be used or applied.

74. With respect to harmonization and standardization, the relevance of existing ISO standards and voluntary initiatives was identified, as well as the need for a shared understanding of the terms "reusability" and "recyclability".

75. Regarding design for recyclability, experts identified a number of types of potential **criteria to improve the recyclability of plastic products** in their questionnaire responses. These include:

a. Essentiality
b. Design for mono-material use
c. Chemical simplicity, safety and colors consideration
d. Compatibility of materials
e. Design for resource efficiency
f. Design to reduce leakage

[53] See draft text compilation, element II.5.a., option 2.
[54] See draft text compilation, element II.13 *bis,* at p. 40.
[55] See potential Annex X, reproduced in Appendix 1.A of this document.
[56] See draft text compilation, element II.4*bis*, at p. 20.

g. Design for disassembly
h. Design for longevity and circularity
i. Design for easier collection and transportation
j. Design for enhanced recycling process.

76. A more detailed summary of potential specific criteria relevant to each of the types of design criteria identified above is provided in Tables D.1 and D.2 in Appendix B.

77. Furthermore, potential types of **design criteria for improved quality** of recycled plastic products were identified by experts in their questionnaire responses, including:

a. Contamination thresholds
b. Material/Polymer type
c. Chemicals, additives and dyes
d. Consistency of quality
e. Avoiding leakage
f. Design for repair and disassembly
g. Design for circularity.

78. Experts also identified a number of **types of design criteria to improve the reusability of plastic products**, including with respect to:

a. Design for disassembly and reassembly
b. Design for durability and repair
c. Material selection
d. Chemicals, additives and microplastics
e. User-centered design
f. National context-specific criteria for reusability.

79. **Table 5** presents an overview of criteria based approaches identified to improve the reusability of plastic products.

Table 5: Overview of expert identified criteria based approaches for improving the reusability of plastic products identified in questionnaire responses

Type of Criteria	Approach
Design for disassembly and reassembly	- Products should be easily disassembled for cleaning, repair, or part replacement[57] - Modular and stackable design - Simplifying the product design to include only essential features. - Use of Standardized Fasteners - Design products that can be melted and that can be processed in a pelletizing machine
Design for durability and repair	- Products should be designed for long service life and multiple uses (reuse and refill) - Design for the environment the product will be used in (e.g., waterproof if used in the bathroom, air sealed if used for food products, microwavable if product is typically heated, refillable after emptying) - Use standardized, interchangeable and easy to repair parts across product lines and brands[58] - Use of easily reusable parts or reuse of parts - Promote use polymer types that are strong and durable (e.g. Polycarbonate reusable cups over Polystyrene single use cups) - possibility of 3D printing for parts - Make collection and storage of the product easier - Design products that can be used for multiple purposes or adapted for different functions (multi-purpose design).

[57] Questionnaire responses refer to the following reference Bakker, C., et al. (2014). Products that last: Product design for circular business models. TU Delft Library.
[58] Questionnaire responses refer to the following reference Ellen MacArthur Foundation. (2013). Towards the Circular Economy Vol. 1: Economic and business rationale for an accelerated transition

Material Selection	- Reduce the amount of material used[59] - Choose materials that maintain integrity over multiple use cycles (use durable and high-quality materials). - Use recycled content that meets defined quality standards. - Products should be made from a single type of plastic or compatible plastics/ polymers to facilitate the recycling process and reduce contamination (avoid combining different types of resins that are difficult to separate and recycle). - Ensure that the raw materials are sourced and processed in an environmentally and socially responsible manner. - At end of life, reusable products should be recyclable
Chemicals and Additives and microplastics	- Require that products do not contain chemicals of high concern, and that applications suit the material/chemical composition of the materials. - Use polymers that are chemically stable- that do not leach harmful materials (e.g. additives) or readily form microplastics over time
User-Centered Design	- Design products that are convenient and appealing for repeated use[60]. - Design for the specific reuse or refill model (e.g. refill at home, refill on the go, return from home, return on the go). - Product are easy to clean (e.g., dishwasher safe, separable components, smooth surface, limit cavities) - Avoid unnecessary hurdles for reuse compared to single-use products - Use smart packaging to facilitate consumer choices and allow consumers to earn discounts for reusing the containers (QR codes, RFID tags, etc.) - Clear labels for consumers on how to return - Include features that enhance usability, such as ergonomic handles and stackable designs. - Develop manuals and provide clear instructions on disassembly, repair and reuse.
National Context-Specific Criteria for Reusability	**Criteria for reusability**: National plans should define criteria for assessing and improving the reusability of plastic products, considering national capabilities, and market conditions (e.g. use as bases: National reuse policies, sustainability assessments). **Design for Multiple Uses:** National plans should incorporate measures for enhancing designs for plastic products, considering product specific considerations such as meeting application requirements, robustness, longevity, durability, safety, ease of cleaning, storability, reassembly, and fitness for multiple uses. References to be used include: Industry best practices, national design standards.

80. **Table 6** presents an overview of expert identified criteria based approaches identified for the improvement of reuse systems quality.

Table 6: Overview of expert identified criteria based approaches to improve the quality of reuse systems identified in questionnaire responses

Measure	Approach
Product design	Selection of suitable material to build the product. Design of replaceable parts of the product, Standardization of shape and design of the different elements for easy management and practical use of reuse systems
Global Harmonized Standards and Guidelines[61] [62]	**Cleaning and Sanitization**[63] Establish protocols for cleaning and sanitizing reusable products and facilities. Including aspects such as: - Water usage management to reduce environmental impacts - Hygiene and safety training for cleaning personnel, and documented maintenance of cleaning system equipment - Green washing product purchases are prioritized, with performance tracked in documentation (excluding cleaning agents), and specific measures are taken to prevent container loss. - Transportation efficiency and (reverse) logistics **Labeling** Establish clear labeling standards to support easier cleaning and collection as well as consumer choices, including: - Standardized and clear product data - Products must be labelled according to their ease of repairability and reuse. **Efficiency and transparency** Minimum performance criteria for efficiency of reusable systems could include:

[59] Questionnaire responses refer to the following reference Hahladakis, J. N., & Iacovidou, E. (2018). Closing the loop on plastic packaging materials: What is quality and how does it affect their circularity? Science of The Total Environment, 630, 1394-1400.
[60] Questionnaire responses refer to the following reference Lofthouse, V., & Prendeville, S. (2018). Human-centred design of products and services for the circular economy–A Review. The Design Journal, 21(4), 451-476.

	- minimum number of rotations greater than their sustainability breakeven point* and/or minimum packaging return rates. - improved efficiency, convenience, and affordability of shared infrastructure. **Quality of reused products** Establish and enforce regulatory standards for the quality of reused and refurbished products. * Breakeven point is the point after which a reusable item's single rotation has a smaller environmental footprint than its equivalent single-use item.
National Standards	National plans to define and enforce standards for reuse systems, ensuring effectiveness for various applications, based on National quality control frameworks and industry standards.
Traceability Systems	Design and implement efficient systems to track individual items through multiple use cycles[64]. - Design systems and infrastructure that are shared and interoperable for return, collection, cleaning, and redistribution of reusable items, using low-emission transport and energy- and water-efficient equipment[65]. - Establish and implement robust data collection and reporting on reuse system performance - Track product history, maintenance records, and adherence to standards - IT integration for automation and traceability - Use RFID tags or QR codes to track product usage and facilitate efficient sorting and return processes. Enhance transparency of information, traceability of product and accountability
Quality Assurance Protocols	Establish regular inspection and testing procedures for reusable products[66]. - Optimization of material flow - Packaging units and materials should be environmentally friendly and safe for public health throughout their lifecycle, linking to requirements for chemicals and polymers of concern. - Storage containers maintain the shelf life of products
Standardized Reuse Models	Develop standardized reuse models (e.g., refill, return systems) for different product categories[67] - Ensure interoperability of systems within and among regions and nations - Packaging standardization and pooling - Develop automated systems for cleaning, repairing, and refurbishing returned products (reverse logistics infrastructure)

81. Experts noted diverging views on whether reuse targets should be set in the instrument, or nationally, per sector/application or by a designated entity.

82. Other potential attributes, in addition to improved reusability and recyclability, were identified for consideration in any approach with regard to plastic product design. These include: safety; carbon footprint; water and energy efficiency; material uses; repairability; alternative feedstocks; circularity; cultural, social and ethical considerations; just transition; local sourcing and production; aesthetics; economic viability; waste hierarchy; transparency and design for manufacturability.

83. Potential **non criteria based approaches** regarding the design of plastics products were identified by experts in their questionnaire responses, for both recyclability and reusability. The elements identified in this context partly overlap with the elements identified above. Additional approaches identified include:

a. Consumer education and stakeholder engagement
b. Research and Development
c. Education and capacity building
d. Job creation
e. Engaging Indigenous Peoples and respect of territory
f. Infrastructure development for reuse systems.

84. **Table 7** lists specific uses and applications for which experts identified that plastic product design approaches may be particularly relevant /applicable.

Table 7 – Overview of specific uses and applications for which experts identified that plastic product design approaches may be particularly relevant/applicable with regard to product design, focusing on reusability and recyclability

Uses or applications	Design features/Properties
Food packaging and food contact plastics	- Use of single-type polymers or compatible polymer blends - Must not release toxic substances when subjected to heat - Reusability and recyclability criteria - Innovation and assessment of alternatives to preserve fresh food
Electronics and Appliances	- Flame resistance and durability - Chemical resistance and thermal stability - Aesthetic appeal - Mechanical strength - Disassembly and reparability criteria - Recycled content criteria - Non-Toxicity
Personal Care and Cosmetics	- Refillable design criteria - Reduced material usage and minimize single-use plastic packaging - Alternative feedstocks - Remove additionally added nano and microplastics
Automotive components/ Aerospace	- Heat resistance - Impact strength - Durability (including tyres wear) - Recycled content criteria - Design for disassembly
Medical devises and sanitary uses	- Durability - Non-toxicity criteria assessment - Chemical resistance and thermal stability - Single-use vs. reusable assessment - Mechanical strength - Dimensional accuracy
Agricultural Plastics	- Biodegradability criteria - Chemical Safety - Durability - UV resistance/stability (for non-biodegradable applications)
Beverage Containers	- Lightweight design - Reusability criteria - Recyclability criteria - Chemical Safety and Non-Toxicity - Elimination of problematic products criteria
Textiles and Clothing	- Dyeability - Comfort - Durability and recyclability - Microfiber shedding reduction
Children's Toys	- Durability - Chemical safety and non-toxicity criteria assessment

VI. Linkages with other provisions

85. In response to questions relating to linkages between draft provision II.3 (on plastic products), II.2 (on chemicals of concern in plastic products) and II.5 (on product design and performance) respectively, and other provisions in the draft text compilation, interlinkages were identified between these three provisions, as well as to means of implementation (Part III of the draft compilation text) and multiple other potential provisions across the draft text, as elaborated in the detailed summary of responses (see **Appendix B**).

VII. Concluding remarks

86. This synthesis presents an overview of the information and key considerations identified through the Expert Group's work to date, including in the responses to the Co-Chairs' online questionnaire, and discussions at the virtual meetings to date, including inputs received at the third virtual meeting. It has been prepared to inform the expert discussions during the in-person meeting in Bangkok and to help shape the development of the Expert Group's outcome, without prejudice to Members' national positions and the outcome of negotiations conducted by the Committee.

87. Information presented in this document is not intended to be comprehensive, but to provide an overview and synthesis of some key concepts to support a shared understanding of the topics, to facilitate and support the Expert Group's further discussions. Experts will have further opportunities to share additional ideas and

perspectives. The further discussions of the Expert Group may also be informed by inputs from the Technical Resource Persons as needed.

88. Through the Expert Group's initial work, nominated experts have identified a number of possible criteria and non criteria based approaches with regard to plastic products, chemicals of concern in plastic products, and product design focusing on reusability and recyclability. As part of the task entrusted to the Expert Group, experts are now expected to contribute considerations or parameters to guide and inform the further analysis of the approaches identified, including to assess their strengths, weaknesses, and effectiveness, as well as the necessary level of intervention and obligation regarding those characteristics. In this context, experts are expected to focus also on uses and applications, e.g. specific sectors or products. Regarding non criteria based approaches, it should become clear whether they rely on no criteria at all or whether the application of criteria would take place at another level, for example nationally rather than globally.

89. By addressing these areas, the Expert Group could provide a comprehensive analysis that supports and facilitates informed negotiations and decision-making at INC-5.

Appendix A
Selected existing MEAs and international policy instruments

The information below is provided for illustrative purposes only and is not intended to prejudge in any way whether or how the committee may wish to address this issue in the context of the future instrument.

For a detailed review of global governance of plastics and associated chemicals, see also *Global governance of plastics and associated chemicals*, Secretariat of the Basel, Rotterdam and Stockholm Conventions, 2023.

Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention)

Link	Stockholm Convention
Membership	152 signatories, 186 Parties.
Overview	The Stockholm Convention on Persistent Organic Pollutants aims to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment. The Convention currently covers 34 persistent organic pollutants (POPs), which are pesticides, industrial chemicals and/or byproducts, and include some that are used in plastic products (see http://chm.pops.int/TheConvention/ThePOPs/AllPOPs/tabid/2509/Default.aspx). The POPs Review Committee reviews proposals submitted by Parties for listing new chemicals in accordance with Article 8 of the Convention. Below is an outline of the process: **1. Submission of proposal for listing a chemical** Any Party may submit a proposal to the Secretariat for listing a chemical in Annex A, Annex B, and/or Annex C to the Convention. The Secretariat verifies that the proposal contains information specified in Annex D and forwards it to the POPRC for consideration. **2. Screening phase** The POPRC examines the proposal and applies the screening criteria specified in Annex D, namely: chemical identity, persistence, bioaccumulation, potential for long-range environmental transport, adverse effects. **3. Risk profile** If the POPRC is satisfied that the screening criteria have been fulfilled, it invites Parties and observers to submit information specified in Annex E and develops a risk profile. Annex E requires that the risk profile further elaborates on and evaluates the information in Annex D and includes as far as possible information on: Sources, hazard assessment for the endpoint(s) of concern, Environmental fate, Monitoring data, Exposure in local areas, National and international risk evaluations, assessments or profiles and labelling information and hazard classifications, and status of the chemical under international conventions. Based on the risk profile, the POPRC makes decision on whether 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. **4. Risk management evaluation** If the POPRC decides that the proposal shall proceed, it invites Parties and observers to submit information related to the socio-economic considerations specified in Annex F and develops a risk management evaluation. Annex F further provides that for the purposes of evaluating possible control measures, relevant information should be provided relating to socio-economic considerations associated with possible control measures to enable a decision to be taken by the Conference of the Parties. Such

	information should reflect due regard for the differing capabilities and conditions among the Parties and should include consideration of the following indicative list of items: - efficacy and efficiency of possible control measures in meeting risk reduction goals - alternatives - positive and/or negative impacts on society of implementing possible control measures - Waste and disposal implications - Access to information and public education - Status of control and monitoring capacity - And national or regional control actions taken. On the basis of the risk profile and risk management evaluation, the POPRC recommends whether the chemical should be considered by the Conference of the Parties for listing in Annexes A, B and/or C. **Decision on listing of the chemical in Annex A, B, and/or C** The Conference of the Parties, taking due account of the recommendations of the POPRC, including any scientific uncertainty, shall decide, in a precautionary manner, whether to list the chemical, and specify its related control measures, in Annex A, Annex B and/or Annex C. To enable Parties to the Convention to take measures to reduce or eliminate releases of POPs from intentional production and use, for which alternatives do not exist yet or are not readily available, the Convention allows Parties to register specific exemptions for a specific period of time. Annexes A and B to the Convention set out specific exemptions that are available with respect to the relevant POPs. Parties may register for acceptable purposes listed in Annex B. Registers have been established for acceptable purposes relating to DDT and PFOS, its salts and PFOS-F. The Convention also allows notification of POPs in articles in use, i.e. for quantities of chemicals occurring as constituents of articles manufactured or already in use before or on the date of entry into force of the obligation with respect to these chemicals. Similarly, Parties may register production and use of quantities of chemicals listed in Annexes A and B as closed-system site-limited intermediates.

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention)

Link	Rotterdam Convention
Membership	72 signatories, 166 Parties.
Overview	The Rotterdam Convention covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by two or more Parties and which the Conference of the Parties has decided to make subject to a Prior Informed Consent (PIC) procedure. The listing of chemicals and pesticides subject to the procedure may result from either: - When the Secretariat is notified of final regulatory actions for the same chemical by Parties belonging to at least two different PIC Regions, it forwards the notifications to the Chemical Review Committee (CRC). This action, initiated by Parties, starts a process that could lead to listing of chemicals in Annex III; or

	- For severely hazardous pesticide formulations (SHPFs), developing countries or countries with economies in transition that are experiencing problems under conditions of use in their territory may propose listing of an SHPF, providing specific documentation in part 1 of Annex IV. Annex II contains criteria for listing banned or severely restricted chemicals in Annex III. Chemicals listed under Annex III When a chemical not listed in Annex III is prohibited or severely restricted by a Party and exported, that Party has an obligation to notify the importing Party before the first export following adoption of the final regulatory action to prohibit or severely restrict, and thereafter before the first export in any calendar year. Once a chemical is included in Annex III, a "decision guidance document" (DGD) containing information concerning the chemical and the regulatory decisions to ban or severely restrict it for health or environmental reasons, is circulated to all Parties. Parties have nine months to prepare a response concerning the future import of the chemical. The response can consist of either a final decision (to consent to import, not to consent to import, or to consent to import only subject to specified conditions) or an interim response. Decisions by an importing country must be trade neutral (that is, decisions must apply equally to domestic production for domestic use as well as to imports from any source). Import responses are circulated and exporting country Parties are obligated under the Convention to take appropriate measures to ensure that exporters within their jurisdiction comply with the decisions. In addition to the PIC procedure, exchange of information takes place through: - the requirement for a Party that plans to export a chemical that is banned or severely restricted for use within its territory to provide export notifications; - information required to accompany exported chemicals, including an obligation on Parties to require that chemicals when exported are subject to labelling requirements and the requirement for an exporting Party, when exporting chemicals that are to be used for occupational purposes, to ensure that an up-to-date safety data sheet is sent to the importer. Information on alternatives is contained in the Decisions guidance documents (DGD) developed by a Chemical Review Committee (CRC). Additionally, Parties that have notified the Secretariat of their banned or restricted pesticides at national level, by submission of the FRA notification forms for this purpose, have also provided information on alternatives for the notified substance. The Secretariat further supports Parties in identifying other sources of information and facilitates an information sharing process whereby national governments can access relevant data on the characteristics, uses and benefits of alternatives to hazardous pesticides. The Secretariat lists electronic links to sources where Parties can obtain more information on alternatives and examples and case studies.

Minamata Convention on Mercury (Minamata Convention)

Link	Minamata Convention
Membership	128 signatories, 148 parties.

Overview	The Minamata Convention aims to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. It includes control obligations across a wide range of sectors, including a ban on new mercury mines, the phase-out of existing ones, controls on mercury supply sources and trade, the phase-out and phase-down of mercury use in a number of products and industrial processes, control measures on emissions to air and on releases to land and water, and the regulation of the informal sector of artisanal and small-scale gold mining. The Convention also addresses interim storage of mercury and its disposal once it becomes waste, sites contaminated by mercury as well as health issues. Among its provisions related to industrial chemicals, Annex B of the Convention phases out mercury-based chlor-alkali and polyurethane production by 2025, and requires Parties to reduce the use of mercury in VCM production by 50% by 2020, using 2010 as a baseline. Annex A of the Convention phases out mercury use in a wide range of products. The Convention mandated a review of the Annexes no later than five years after entry into force of the Convention, taking into account Annex listing proposals, information on mercury-added products and their alternatives, and availability to the Parties of mercury-free alternatives that are technically and economically feasible, taking into account the environmental and human health risks and benefits. This review was completed at COP-4, and Annex amendments were finalized at both COP-4 and COP-5. Parties shall not allow the export of mercury except to a Party that provides written consent to the exporting Party and only for the purpose of an allowed use or for environmentally sound interim storage. Export to non-Parties is also allowed under the same conditions. In addition, a non-Party must demonstrate that it has measures in place to ensure the protection of human health and the environment and to ensure its compliance with the provisions of the treaty related to interim storage and mercury wastes. Exchange of information is required on the reduction/elimination of production, use, trade, and emissions/releases of mercury, and on alternative manufacturing processes. Parties must also include information in their national reports showing that trade requirements and control obligations of the treaty have been met.

Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol)

Link	Montreal Protocol
Membership	198 parties.
Overview	The Montreal Protocol regulates the production and consumption of man-made chemicals , phasing out the consumption and production of the different ozone-depleting substances (ODS) and phasing down the production and consumption of hydrofluorocarbons (HFCs) in a stepwise manner, with different timetables for developed and developing countries (referred to as “Article 5 parties”). Under the Protocol, all parties have specific responsibilities related to the phase out of the different groups of ODS and the phasedown of HFCs, control of ODS and HFC trade, annual reporting of data, national licensing systems to control imports and exports of ODS and HFCs, and other matters. Both developing and developed countries have binding, time-targeted, and measurable commitments, with the timing of phaseout and phasedown obligations for developing countries generally being delayed and with support for these countries being available from the Multilateral Fund for the Implementation of the Montreal Protocol. Articles 2A-2J of the Montreal Protocol include control measures for a list of ODS and HFCs, with lists of corresponding substances specified in Annexes A to F. Article 6 provides for assessment and review of the control measures provided for in Article 2 and Articles 2A to 2J from 1990 and every four years thereafter based on available scientific, environmental,

	technical, and economic information. See Summary of control measures under the Montreal Protocol. Three Assessment Panels (TEAP, SAP and EEAP) provide information to the parties on issues related to technical and economic implications of alternative technologies (TEAP), the status of the ozone layer and relevant atmospheric science issues (SAP), and the implications to human health and the ecosystems from ozone layer depletion (EEAP).

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention)

Link	Basel Convention
Membership	53 signatories, 191 Parties.
Overview	The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes and other wastes requiring special consideration. It covers wastes defined as "hazardous wastes" based on their origin and/or composition and their characteristics, as well as four types of wastes defined as "other wastes" - household waste and residues from its incineration, plastic waste and electrical and electronic waste. The provisions of the Convention center around the minimization of hazardous wastes and other wastes generation and the promotion of their environmentally sound management, wherever the place of disposal; the restriction of transboundary movements of hazardous wastes and other wastes; and a regulatory system (prior informed consent procedure) applying to cases where transboundary movements are permissible. Since its adoption in 1989 and entry into force in 1992, the Basel Convention has seen a number of significant developments. On 5 December 2019, the "Ban Amendment", providing for the prohibition of transboundary movements of all hazardous wastes covered by the Convention from countries listed in annex VII to the Convention (Parties and other States which are members of the OECD, EC, Liechtenstein) to all other countries, entered into force. Under the Basel Convention, transboundary movement of the following plastic waste is subject to a prior informed consent procedure and Parties to the Convention are to ensure that the wastes can be disposed in an environmentally sound manner in the country of import: a. Plastic waste classified as hazardous waste: entry A3210 reads "Plastic waste, including mixtures of such waste, containing or contaminated with Annex I constituents, to an extent that it exhibits an Annex III characteristic (note the related entries Y48 in Annex II and on list B B3011)". Examples of hazardous constituents that may be found in plastic waste due to their use as additives in various applications are lead compounds (used as heat or light stabilizers) and organohalogen compounds (e.g. halogenated organic compounds used as flame retardants). b. Plastic waste requiring special consideration: entry Y48 covers plastic waste, including mixtures of such wastes, except for those falling under entries A3210 or B3011. As specified in entry B3011, the following plastic waste is not subject to the PIC procedure, provided it is destined for recycling in an environmentally sound manner and almost free from contamination and other types of wastes: a. Plastic waste almost exclusively consisting of one non-halogenated polymer. Such polymers include commonly used ones like polyethylene, polypropylene and polyethylene terephthalate (PET). b. Plastic waste almost exclusively consisting of one cured resin or condensation product. Such resins include urea formaldehyde resins and epoxy resins.

	c. Plastic waste almost exclusively consisting of one of the following fluorinated polymers: • Perfluoroethylene/propylene (FEP) • Perfluoroalkoxy alkanes • Tetrafluoroethylene/perfluoroalkyl vinyl ether (PFA) • Tetrafluoroethylene/perfluoromethyl vinyl ether (MFA) • Polyvinylfluoride (PVF) • Polyvinylidenefluoride (PVDF). The following mixtures of plastic waste are also not subject to the PIC procedure: Mixtures of plastic waste, consisting of polyethylene (PE), polypropylene (PP) and/or polyethylene terephthalate (PET), provided they are destined for separate recycling of each material and in an environmentally sound manner, and almost free from contamination and other types of wastes.

ILO Chemicals Convention and Recommendation

Link	ILO Convention No. 170 and Recommendation No. 177.
Membership	24 ratifications of ILO Convention No. 170.
Overview	ILO Chemicals Convention, 1990 (No. 170) and ILO Chemicals Recommendation, 1990 (No. 177) are two of the main ILO instruments dealing with chemicals. ILO Convention No. 170 applies to all branches of economic activity in which chemicals are used. The Convention recognizes that the protection of workers from the harmful effects of chemicals also enhances the protection of the general public and the environment. It prescribes the classification of all chemicals by hazards and other properties, the labelling of chemicals with appropriate hazard information and symbols as well as the provision of safety data sheets to workers on all hazardous chemicals used at their workplace. As a follow up to the Convention's adoption, the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) was developed (see below). Convention No. 170 and Recommendation No. 177 oblige ratifying states to implement a general national policy on the prevention of occupational accidents and work-related diseases caused by chemicals and to minimize the causes of hazards inherent in the working environment. The instruments also define detailed responsibilities for employers regarding the assessment of chemical hazards at their worksites and measures to limit the exposure of workers to hazardous chemicals, to protect workers from chemicals they are exposed to and to ensure an environmentally sound disposal of chemical waste. Employers are also obliged to constantly inform and train workers on chemical risks at the workplace. Suppliers of chemicals shall ensure that chemicals are marked to indicate their identities, hazardous chemicals are labelled, and workers receive safety data sheets of hazardous chemicals. Employers shall adhere to same marking/labelling requirements for chemicals used at work and ensure that safety data sheets are provided. Where these are not available, the chemicals shall not be used by employers until such labelling and information has been obtained. Exporting member States shall communicate to any importing country whether uses of hazardous chemicals are prohibited for reasons of safety and health at work, and the reasons for it. For further information, see NORMLEX.

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Link	Globally Harmonized System of Classification and Labelling of Chemicals GHS 10th revision
Membership	See information of the status of implementation here: https://unece.org/ghs-implementation-0
Overview	The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is an internationally agreed-upon system to standardize chemical hazard classification and communication. The GHS arose from an international mandate during the United Nations Conference on Environment and Development (1992), as a response to the ILO Chemicals Convention No. 170 and the ILO Chemicals Recommendation, No. 177. The adoption of these instruments necessitates a system for hazard classification and labelling. The tenth revised edition of the GHS takes account of amendments circulated as document ST/SG/AC.10/50/Add.3. The GHS includes criteria for classifying substances and mixtures according to their physical, health and environmental hazards and requirements for communication of the hazards, through labels and safety data sheets (SDS).

Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) and PRTR Protocol

Link	Aarhus Convention Protocol on PRTRs
Membership	47 parties to the Aarhus Convention 38 Parties to the Protocol on Pollutant Release and Transfer Registers (PRTRs)
Overview	Article 1 of the Convention requires Parties to guarantee the rights of access to information, public participation in decision-making and access to justice in environmental matters to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being. The Kyiv Protocol on Pollutant Release and Transfer Registers (PRTRs) adopted under the auspices of the Aarhus Convention aims to enhance public access to information through the establishment of coherent, nationwide pollutant release and transfer registers (PRTRs). PRTRs are inventories of pollution from industrial sites and other sources. See Introduction to the Kyiv Protocol on Pollutant Release and Transfer Registers .

The Global Framework on Chemicals (GFC)

Link	https://www.chemicalsframework.org Global Framework on Chemicals - Texts and resolutions of 5th International Conference on Chemicals Management
Overview	The 'Global Framework on Chemicals – For a planet free of harm from chemicals and waste' (GFC) was established at the fifth International Conference on Chemicals Management (ICCM5) in Bonn, Germany, in September 2023. A Declaration was also adopted during ICCM5. The Global Framework presents a plan with 5 strategic objectives and 28 targets to guide countries and stakeholders in jointly addressing the lifecycle of chemicals, including products and waste.

	It is multi-stakeholder and multisectoral in nature and encompasses the involvement of relevant stakeholders across the life cycle of chemicals at the local, national, regional, and global levels. It emphasizes the collaboration of governments, international technical agencies, civil society, and the private sector in areas such as phasing out harmful chemicals, enhancing capacity building, and establishing better connections across various sectors like health, safety, trade, agriculture, energy, and transport. The Global Framework advocates for preventing the illegal trade of chemicals and waste, implementing national legal frameworks, and discontinuing highly hazardous pesticides (HHPs) in agriculture by 2035. It also encourages the transition to safer chemical alternatives, responsible management in sectors like industry, agriculture, and healthcare, and improved transparency and access to information about chemicals and associated risks. ICCM5 introduced a Global Alliance on Highly Hazardous Pesticides and initiated a process to create implementation programs for the new Framework. These programs aim to establish sector-focused initiatives involving major users of chemicals, including the textile and construction sectors. To facilitate reporting and monitoring of progress and impact in its implementation and contribute to assessing progress towards the vision, the Framework refers to a measurability structure in its Section XI and in its annex III. Resolution V/9 specifies that the measurability structure is the basis for measuring progress by and for stakeholders, according to the process outlined in section XI of the GFC. Further in resolution V/9, the ICCM5 decided to establish an open-ended ad hoc group on measurability and indicators to prepare recommendations for finalizing the measurability structure and propose a set of indicators for annex III to the GFC.

Appendix B
Detailed summary of questionnaire responses

See separate document available at:

https://wedocs.unep.org/bitstream/handle/20.500.11822/46053/Detailed_Questionnaire_Responses_Summary.pdf