



**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Sixty-first session**

Geneva, 28 November-6 December 2022

Item 6 (b) of the provisional agenda

Miscellaneous proposals for amendments to the Model Regulations**on the Transport of Dangerous Goods: packagings, including the use of recycled plastics material****Proposal to permit increased use of recycled plastics material
to attain United Nations 2030 goals****Submitted by the International Confederation of Plastics Packaging
Manufacturers (ICPP), the International Confederation of
Intermediate Bulk Container Associations (ICIBCA)*****Introduction**

1. The above organizations, to advance progress toward the United Nations goals for Sustainable Development, propose amendments to the Model Regulations while maintaining the level of safety provided for the safe transport of dangerous goods.
2. The current definition of “recycled plastics material” included in the Model Regulations for more than twenty years already provides a good basis for the recycling of used dangerous goods plastic packagings. The objective of this proposal is to introduce (i) minor streamlining of the existing requirements based on extensive experience gained and (ii) the option of using recycled plastics material from other sources under controlled conditions that provide for the integrity of plastics dangerous goods packaging. The approach taken is to introduce a two-part definition - one part for existing Model Regulations authorized recycling and one part to provide for a wider range of recycled plastic sources. This approach is taken to avoid uncertainty respecting existing recycling practices under the conditions of the existing (in the Model Regulations) definition of recycling, particularly during this critical period when new requirements may be developed during the next biennium.
3. Our two organizations have endeavoured to obtain comments from some Sub-Committee members in advance of submitting our proposal and we greatly appreciate the comments provided. In advance of the sixty-first session, we would welcome further comments to facilitate discussion at the forthcoming session and, if appropriate, to submit a follow-up informal document.

* A/75/6 (Sect.20), para. 20.51

Discussion

Changes affecting the current 1.2.1 definition of recycled plastics material

4. Definition of “batch”. The word “batch” as used in the definition is undefined and it has taken on different meanings. It appears that how the term is defined impacts the economic viability of recycling based primarily through increased testing costs (i.e., a smaller batch size definition increases testing frequency). In the proposal and, as discussed at the sixtieth session, the meaning of batch is clarified to mean that it refers to a volume of resin with a “homogeneous composition”.
5. Performance testing. Based on the extensive experience gained under the current definition over twenty years and the proven reliability of produced packagings, the proposal is to require performance testing consistent with that for unused (virgin) resin.
6. Note referring to ISO 16103. A proposed change to the existing note is to clarify that the ISO standard “may be followed” and is not mandatory. This wording is consistent with notes referring to ISO 16106 under 6.1.1.4, 6.3.2.2, 6.5.4.1, and 6.6.1.2. The wording is also more appropriate in that ISO 16103 does not specifically address recycling as proposed in item 2 of the revised definition below; but it could still provide guidance.

Provision for resins from other sources

7. New section of the recycled plastics definition. An emerging approach to resin recycling is to use recycled resins derived from other sources beyond those currently anticipated by the 1.2.1 definition. Proposed provisions are similar to the longstanding requirements but vary somewhat in that it is an emerging methodology, and these resins may be produced/supplied differently.

Proposal

8. Based on the above, the following changes (new text is underlined, deletions shown in ~~strike through~~) to the definition of recycled plastics material in 1.2.1 are proposed:

“Recycled plastics material means:

(a) Material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings. The specific properties of the recycled material used for production of new packagings shall be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material that is of homogeneous composition has the proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packagings produced using that material. Packagings produced from this recycled material are subject to performance testing as for packagings made from resin material not previously used. In addition, the packaging manufacturer’s quality assurance programme under 6.1.1.4 shall include performance of the mechanical design type test in 6.1.5 on packagings manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing; or

(b) Material recovered from used plastic products, except as already provided above, where the material properties are assured and documented by the resin provider in accordance with a quality assurance programme, that ensures proper pre-sorting, cleaning and verification of properties of each batch of homogeneous composition, including melt flow rate, density, and tensile yield strength. The packaging manufacturer’s quality assurance programme under 6.1.1.4 or 6.5.4.1 shall ensure the recycled material properties conform to that of the applicable design type and shall

include performance of appropriate mechanical design type tests in 6.1.5 or 6.5.6 on packagings manufactured from each batch of recycled plastics material that is of homogeneous composition. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing.

NOTE: ISO 16103:2005 “Packaging – Transport packages for dangerous goods – Recycled plastics material”, provides additional guidance on procedures ~~to be followed~~ which may be followed in approving the use of recycled plastics material. These guidelines have been developed based on the experience of the manufacturing of drums and jerricans from recycled plastics material and as such may need to be adapted for other types of packagings, IBCs and large packagings made of recycled plastics material.”

9. Based on prior comments received by the authors, the Sub-Committee may wish to consider whether it is necessary to clarify that the word “packaging” as used in the definition also refers to Intermediate Bulk Containers (IBCs). While the definition “packaging” in 1.2.1 does not exclude IBCs, requirements in Part 4 often refer to “packagings, including IBCs.”
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