



**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****Sixtieth session**

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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****Comments on the ECOSOC 2030 Agenda as it affects plastic
packagings for dangerous goods****Submitted by the International Confederation of Plastics Packaging
Manufacturers (ICPP), the International Confederation of Container
Reconditioners (ICCR), the International Confederation of
Intermediate Bulk Container Associations (ICIBCA)*****Introduction**

1. The author organizations appreciate the information on the ECOSOC 2030 Agenda for Sustainable Development and the need for the Sub-Committee's agenda to support the ECOSOC goal as described in informal document INF.31/Rev.1 (59th session). Members of our associations continually strive to enhance sustainability consistent with ECOSOC 2030 Agenda and other governmental initiatives. Significantly, some prospective governmental requirements call for plastics used in new plastic products to contain minimum amounts of recycled plastic content in the order of twenty-five percent or more in some instances. Consistent with Annex I of informal document INF.31/Rev.1 (59th session) which seeks to provide an overview of the work of the Sub-Committee of Experts on the Transport of Dangerous Goods and its linkages to the 2030 Agenda (see Annex I, paragraphs 14, 24 and 27), our associations note that considerable progress has been made in enhancing the sustainability of plastic packagings in accordance with existing provisions in the Model Regulations authorizing reuse of packagings and authorizing the use of recycled resins derived from used dangerous goods plastic packagings. At the same time, we believe more work is necessary.

2. While reuse of plastic packagings for purposes of transporting dangerous goods is a mature industry, there is considerable potential for expanded reuse of plastic packaging material for the manufacture of new plastic packagings by amending current regulations that restrict wider resin reuse. Through this document our organizations seek to identify ways in

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

which the Sub-Committee may more comprehensively support the ECOSOC 2030 Agenda as it applies to sustainability of plastic packagings.

3. Considering that the future twenty-third revised edition of the UN Model Regulations produced as a result of decisions reached in this biennium will take effect on 1 January 2025 at the earliest, there is a need to address the matter of plastic recycling in a timely manner if the 2030 deadline date is to be achieved.

Background

Performance packaging requirements in the UN Model Regulations

4. The Model Regulation provisions for performance-oriented packaging requirements, including those for plastic packagings, were first introduced in 1990. In adopting these requirements, the packaging regulations used were changed from detailed specification-based requirements to ones that focused primarily on performance based on testing. This has enabled packaging manufacturers to innovate and create new packaging designs that are safe, and reliably provide a high degree of packaging integrity through efficient industrial processes in ways supportive of sustainability while providing increased protection of people and the environment.

5. Through the performance packaging requirements, plastic packaging manufacturers have been free to decide what specification plastic to use for a packaging design type and through a manufacturer's quality assurance program adherence to the plastic specification required for a design type is assured, resulting in packagings that reliably meet all applicable packaging requirements.

Historical restrictions in the UN Model Regulations on the use of used plastic material based on potential for contamination

6. In contrast to virgin plastic resins materials where no specific safety based restrictions apply, use of recycled plastic resins is tightly controlled. The current constraints are proving detrimental to full realization of the potential for using recycled plastic in the manufacture of dangerous goods packagings, particularly as industry practices evolve (e.g., the increasing availability of resins with recycled content).

7. Among the original regulatory requirements for plastics that could be used in the manufacture of plastic packagings under the Model Regulations was a requirement that:

“no used material other than production residues or regrind from the manufacturing process could be used.”

8. This limitation, which was adopted more than thirty years ago when little attention was given to plastic recycling, was applied to packagings such as jerricans, plastic drums and plastic intermediate bulk containers where a dangerous good lading could be in direct contact with the plastic material. Notably, it was not applied to plastic bags, boxes and large packagings which are instead required to be made from “suitable” plastic material without precluding inclusion of recycled plastic content. The prohibition of “used material” was apparently out of concern that some lading materials permeating into the walls of plastic packagings could potentially contaminate other goods transported in packagings subsequently made from the regrind produced from the original package. The strength of recycled material may also have been a concern.

9. Considerable experience has now shown that prohibiting plastic packagings from incorporating recycled plastic is unnecessary. Studies by industry involving packagings made of regrind from used plastic packagings has proven that potential contamination is not a safety problem. Further, the successful and wide reuse of many millions of plastic packagings (frequently reused to transport dangerous goods on the order of five or six times before a package is retired) supports this conclusion. In addition, packaging manufacturing has evolved so that added protection against permeation may be provided through different barrier technologies. As always, a consignor can take any remaining concerns into account in packaging selection.

10. Experience has also shown that packagings can safely be made from recycled plastic resins, when recycled plastic materials of defined specification are used. The performance of packagings made from 100% recycled resin content is well demonstrated through the manufacture and use of many millions of drums and jerricans and their safety record.

Demonstration of the viability of using recycled content (for more detail, see informal document INF.16 to the fifty-sixth session)

11. The plastic packaging manufacturing industry first began studying the use of recycled resins in the manufacture of dangerous goods packagings in 1982 and governmental authorizations to allow the use of recycled content were first granted in 1992. Later as a way of proving recycled plastic could be safely used, provisions were introduced in 1.2.1 of the Model Regulations definition of recycled plastic material. This was to allow the manufacture of new packagings from recycled resin derived from plastic packagings used to transport dangerous goods. At that time, the thinking was to streamline requirements and allow for wider usage as experience was gained. To date it is estimated that more than 10 million drums and jerricans have been manufactured from recycled resins and these packagings have proven to be equally as safe as packagings made from virgin resin material.

12. Experience gained has shown that the performance of packagings made from recycled plastic material and packagings made from virgin resins is the same when comparable resin and manufacturing controls are applied. Notably the plastic properties of melt flow rate and density have been shown to predict the performance of packagings made from recycled plastic materials. Whether the resin is a virgin resin or a recycled resin, monitoring such properties by the manufacturer for each design type ensures consistent packaging integrity.

13. Based on the positive results demonstrated through successive competent authority approvals, restrictions by the United States of America have been progressively reduced so that many plastic packagings made from recycled material are now only subject to requirements comparable to packagings made from virgin material. To realize the ECOSOC 2030 goals, there is now a need to authorize similar manufacture of packagings with recycled content worldwide through amendment of the Model Regulations.

Impediments to use of recycled content in the manufacture of plastic packagings

14. In spite of the positive experience, the use of recycled plastic resin materials in the manufacture of new packagings is quite limited in comparison to the number of plastic dangerous goods packaging manufactured worldwide. While the safety of resin reuse is well proven, existing requirements dealing with the collection, processing, batch testing of plastics and added performance testing serve as disincentives when comparable requirements do not apply to the manufacture of packagings of virgin resins materials. Another limitation of the current requirements is that only recycled resin derived from industrial packagings is authorized for reuse. With the increased emphasis on plastic recycling, increasingly resin suppliers are offering resins with recycled resin content. Although potentially not suitable for some applications based on other regulations (e.g., for food and medical safety) or practical considerations, they are in accordance with specifications suitable for manufacture of dangerous goods packagings. Allowing these resins (i.e., those with recycled content) provided by resin suppliers to be used could markedly increase the use of recycled plastic in the manufacture of dangerous goods packagings.

Proposal

15. Considering the experience gained over many years that has amply demonstrated the safety of plastic reuse, the 1.2.1 restrictions now act as an impediment to further use of recycled resin. Far wider use of recycled plastic material is possible if these constraints were lifted and the manufacturer as part of its quality assurance program is entrusted with ensuring that both virgin resins and resins with recycled content are in conformance with specifications of the design type.

16. Regulatory control of recycled plastics in manufacturing plastic packaging is unprecedented. Other materials that may be recycled and used in the manufacture of new packagings are not subject to similar controls under the regulations. These materials may include steel, aluminium, and fibreboard as well as recycled plastics that may be contained in suitable plastic materials used in the manufacture of bags, boxes and large packagings. These materials may all be recycled and reused without any requirement unique to reuse.

17. Consistent with the above we recommend the following:

(a) In accordance with 2030 Agenda, the Sub-Committee agree that additional steps should be taken to promote the use of recycled plastic materials and recycled content in the manufacture of plastic packagings;

(b) Consistent with the philosophy of performance packaging requirements as applied to all other packaging types, the Sub-Committee agree to streamline requirements for manufacturing packagings from recycled resins in furtherance of ECOSOC 2030 goals by removing regulatory impediments and allow manufacturers to innovate as they do for other packagings. Annex I of this paper proposes amendments that will promote recycled plastic content to the fullest extent possible in furtherance of ECOSOC 2030 Agenda.

18. ICPP, ICCR and ICIBCA appreciate the opportunity to describe our industry's vision of how we can together support the ECOSOC 2030 Agenda related to sustainable development and welcome the views of the Sub-Committee.

Annex

Amendments to the UN Model Regulations that will most fully promote the use of recycled plastic content in the manufacture of plastic packagings

The following amendments are proposed:

1. In 1.2.1 of the Model Regulations, delete the definition of “recycled plastic material”.
2. In 6.1.4.8.1 replace the second sentence by “The manufacturer shall ensure that plastic materials used in manufacturing conform to specifications of the design type.”
3. In 6.5.5.3.2 replace the second sentence by “The manufacturer shall ensure that plastic materials used in manufacturing conform to specifications of the design type.”
4. In 6.5.5.4.6 replace the second sentence by “The manufacturer shall ensure that plastic materials used in manufacturing conform to specifications of the design type.”
5. In Chapter 6.1 delete the entire paragraph 6.1.3.6: ~~”Packagings manufactured with recycled plastics material as defined in 1.2.1 shall be marked REC”. This mark shall be placed near the marks prescribed in 6.1.3.1”.~~
6. In Chapter 6.5 delete the entire paragraph 6.5.2.1.2: ~~“IBCs manufactured from recycled plastics material as defined in 1.2.1 shall be marked “REC””.~~