

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

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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

Information on the Regulatory aspects on the use of recycled plastics in response to informal document INF.6 (58th session) by the expert from Belgium

Transmitted by the expert from the United Kingdom

1. In informal document INF.6 (58th session) the expert from Belgium raises several important questions in relation to the identification and use of recycled plastics materials and the relevance and meaning of some of the text in the Model Regulations. This information paper aims to provide some further background in relation to the development of the regulations and to give the UK expert opinion to the six questions posed in paragraph 14 of informal document INF.6.

2. Perhaps the most important point that must be kept in mind throughout this discussion is that plastics is a property and not a material. Thus, in using the term “suitable plastics material” the regulations are not restricting plastics packagings to any particular group of polymers or resins. In addition, when this text was developed, plastics packaging for dangerous goods was in its infancy in comparison with steel and wood. Indeed, many of the first UN tests done on plastics packaging in the UK resulted in failure and it took industry some years to refine both design and the polymer/resin combination used to start achieving reliable test results. Even today different polymers with the same technical specification can display significant differences in performance under test conditions.

3. One of the major concerns with plastics packaging has always been compatibility between the plastics material and the content of the packaging, predominantly when the content is liquid. This interaction can be particularly strong when the plastics material used for the packaging is a High-Density Polyethylene (HDPE) polymer as the molecular structure allows ingress of some substances. This type of plastics is most often used for drums and jerricans as single packagings. It was this concern that primarily developed two pieces of text in the Model Regulations, 4.1.1.5 the 5-year life restriction, and the recycled text of 6.1.4.8.1 and 1.2.1. The intention was to make sure the packaging industry did not simply collect their used containers, chop them up and then add the used material in with virgin polymer of the same type. Contrary to the view expressed by the Belgian expert in paragraph 3 we do not believe that the suitable material interpretation has further consequences. We believe this is because 6.1.4.8.1 includes a blanket ban on used material for plastics drums and jerricans, the recycled material being allowed by exception. It should also be noted that the text in 1.2.1 is written around HDPE and is difficult to apply to other plastics polymers and resins.

4. This, however, raises a significant matter of interpretation when looking at paragraphs 5 and 6 of informal document INF.6. Situation A is the normal position, the plastics polymer has a manufacturers reference and there is an accompanying technical specification. We do not require further details such as which plant manufactured the polymer or where the oil came from. If it passes the test it is suitable. It is taken on trust that the polymer (usually supplied in powder or bead form) is 100 % virgin. Situation B isn't as straightforward as it appears. There is a possible difference between 6.1.4.8.1 and 1.2.1. the former is ambiguous

as it implies that during production the only used (processed) material you can add back into production are regrinds from that batch or recycled material meeting 1.2.1. Effectively drums carrying Mark A could be used, then processed according to 1.2.1 and then the resultant material added to new production run of drums of Mark A. The definition in 1.2.1 refers to the production of new packagings without indicating if new means design type. The inference is that it simply means new since part of the manufacturers quality assurance programme is to do the UN tests on each batch using recycled material. Certainly, in the UK testing done under a manufacturers quality assurance programme would not lead to a UN mark.

5. The table included in paragraph 7, which is a summary of where recycled plastics according to 1.2.1 are mandated, confirms the understanding given in paragraph 3 above and reveals a mistake in the text in 6.1.4.19.2.8. The only difference between an outer plastics box and an outer plastics drum is shape. Since in all other instances where plastics are used as the outer of a composite packaging the recycled requirements of 1.2.1 do not apply, there is no reason for them to be applied in 6.1.4.19.2.8. The reference in INF.6 paragraph 8 to no used material for flexible IBCs applies to all types of flexible IBC not just to woven plastics. In this instance the restriction is clearly aimed at cutting panels or sections out of used flexible packagings and sewing them together to make a new flexible IBC. This does not address the polymers used to make the plastics threads subsequently used to make woven plastics flexible IBCs.

6. Regarding paragraphs 9 and 10 of INF.6 and the use of the REC mark, it is only mandated where the plastics is recycled in accordance with 1.2.1. That the REC is placed near the packaging mark and is not part of the packaging mark also lends support to the adding of recycled plastics into production lines of already approved packagings rather than being for a new design type where a suffix to the packaging code would be more appropriate.

7. The UK response to the six questions in paragraph 14 of informal document INF.6 are as follows:

- Suitable plastics material should not be defined any further.
- Yes, we believe that a differentiation should be made between recycled plastics material and polymers and resins which include recycled plastics as part of their formulation.
- Yes, the performance based approach is correct as it is the mandated standard for all types of packaging. Extension into source material would be limiting and contentious. Why only for plastics – what about recycled content of fibreboard, plastics bags etc.?
- No. Due to the diversity of the types of plastics, different manufacturing techniques and uses, plastics packagings cannot be considered as equal in regard to use of recycled material. The basic UN structure in regard to approved packaging is design, material (of construction) and content (liquid or solid).
- No, because all tested packagings have a specification of what was tested and in the case of plastics an identification of the polymer/resin maker and the polymer/resin identity, whether the material is virgin or has recycled elements is not material to either the performance or the use. For some packagings like corrugated fibreboard the use of some recycled material is common industry practice.
- For consistency any regulation should be done at the UN level. If left to Competent Authorities, then package testing tourism will develop and the whole UN system will be undermined.

8. Finally, the United Kingdom expert would ask an additional question of the Sub-Committee. How many quality assurance programmes for recycled plastics in accordance with 1.2.1 have your Competent Authorities recognised in the last twenty years and how many are current? The UK response to this is 0 and 0 so it would seem that far from encouraging the use of recycled plastics material the current text is an unintended barrier.