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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

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Item 2 of the provisional agenda

PERFORMANCE OF PACKAGINGS, INCLUDING IBCS

Testing of aerosol dispensers

Transmitted by the International Organisation of Aluminium Aerosol Container Manufacturers (AEROBAL)

I. BACKGROUND

1. Recently legislative changes have been initiated at United Nations and European Union level allowing a "cold" alternative to the hot water bath test for testing aerosols. The UN Sub-Committee on the Transport of Dangerous Goods included the "cold" alternative in the fourteenth revised edition of the UN Model Regulations on the Transport of Dangerous Goods (Chapter 6.2.4.2.2) in 2005, and the European Commission is going to include the reference to the hot water bath alternative in the coming revision of the Aerosol and Dispenser Directive 75/324/EEC (article 6.1.4.1, point (3)) which is likely to be adopted soon (excerpt in annex 1 reproduced in informal document INF.3).

2. AEROBAL does not support these legislative changes at UN and EU level for the following reasons.

II. REASONS

A. Exclusion of aluminium aerosol cans from the "cold" alternative by definition

3. The results presented in the report UN/SCETDG/24/INF.49, which was the basis for the wording of the UN Model Regulations on alternatives to the water bath test and for the revision of the European Aerosol and Dispenser Directive, are only related to tinplate cans because aluminium cans could not meet the requirements of the so-called Burgoyne protocol for the trials at the Wella plant in Hünfeld. According to the protocol only 100% pressure tested empty cans were allowed to participate in the trials. Therefore aluminium aerosol cans could not participate in the trial.

4. As a matter of fact, in paragraph 6.2.4.2.2.2. of the UN Model Regulations, to which the revised Aerosol and Dispenser Directive makes a reference, the requirement "This shall be at least two-thirds of the design pressure of the aerosol dispenser" is not applicable to aluminium cans. With relatively high pressures of up to 18 bar, which filled aluminium aerosol cans might reach, available test devices have shown deformation of the aluminium can because the can's bead - due to its material properties - cannot stand the load of the fixing device. This test procedure has a detrimental effect on the integrity of the aluminium can and therefore cannot be used in practice for transport and consumer safety reasons.

5. In the Burgoyne study they were proposing an extrapolation of the results for tinplate cans to aluminium cans which is not justified and rejected by AEROBAL. The requirements are only feasible for tinplate but not for aluminium cans. Thus it is still to be proved that this protocol is also efficient for aluminium cans.

6. Therefore the alternative test method which is included in the UN Model Regulations was only audited for tinplate cans. Aluminium aerosol cans are excluded from the alternative by definition.

7. In this context it has to be explained that aluminium aerosol cans are seamless, one-piece containers, whereas tinplate cans are three-piece containers. A tinplate can thus offers more damage possibilities due to its three-piece-construction, existing joints (flanging area and seam) and the use of a compound. This is the reason why the tinplate can industry has always made a 100 % pressure test of empty cans to be able to supply the quality demanded by the market.

B. Loss of transport and consumer safety

8. As outlined above the "cold" alternative has a detrimental effect on the integrity of high pressure aluminium cans and therefore cannot be used in practice for transport and consumer safety reasons. To the best of our knowledge there is no audited evidence existing at the moment that the "cold" alternative is appropriate for aluminium cans.

9. In addition due to the material properties of aluminium it might well be that the pressure stability of aluminium cans is negatively influenced through damages during the transport, the storage and the filling of the can, after the containers have left the can manufacturer's premises. Aluminium cans can be damaged e.g. when forklift trucks damage the cans on the pallets, when

personnel damages the can during slitting the stretch film around pallets or because of damages during the conveying and loading process at the fillers premises. All these cases already occurred in the past and were detected in the hot water bath. They would probably not have been detected with the “cold” alternative because the filled container is no longer pressure tested.

10. By the way these dangers during the transport, the storage and the filling process do not necessarily only apply to aluminium cans, but could also apply to other cans.

11. This produces non-calculable safety and product liability risks for aluminium aerosol can producers and all other parties involved in the supply chain. This was also confirmed by two legal expertises commissioned by AEROBAL (annex 2 reproduced in informal document INF.3).

C. Need for high investments without any proven additional value added for aluminium aerosols

12. If a filler/customer switches from the hot water bath test to the alternative test, aluminium aerosol can producers would have to restructure their production lines and install a 100% burst test device in their existing lines. Irrespective of the fact that such a device is currently not available for 18 bar cans – as already outlined above, the estimated restructuring costs would be roughly 450.000 € per production line. This is a fairly big investment for a medium-sized industry acting in a highly competitive market. On top of that additional space which is needed for the installation of the test equipment will not necessarily be available.

13. This cost burden brings along a competitive disadvantage for aluminium aerosol can producers. As explained above, tinplate can manufacturers have always made 100 % pressure tests of the empty can due to the three-piece technology. Aluminium aerosol cans are seamless, one-piece containers. Therefore aluminium aerosol can manufacturers make a 100 % leakage test of empty cans and produce according to the AEROBAL „Code of Best Practice“. When it comes to safety, aluminium aerosol cans are at least as good as 100 % pressure tested three-piece tinplate cans. This is common knowledge which is shared by all stakeholders in the industry.

14. The forced investment in the currently defined “cold” alternative solution is all the more questionable under the consideration that the alternative is not validated for aluminium aerosol cans as outlined above, that it is less safe than the water bath test and that it might therefore endanger the whole aerosol industry.

15. Up to now a thorough analysis of the economic impact of the alternative test method has not been provided in which the advantages for fillers and the disadvantages for aluminium can producers are presented in a balanced way.

D. Hot alternatives not considered in the UN Model Regulations

16. The coming revision of the European Aerosol and Dispenser Directive will also allow hot alternative test methods under certain conditions in future.

17. In order to harmonise European and international regulations for aerosol containers, to avoid future barriers to trade and to open up the UN transport regulations also for “hot” alternative test methods, AEROBAL members hold the view that the UN Model Regulations should allow “hot” alternatives which provide an equivalent level of safety as the hot water bath test. The limitation to a single “cold” alternative test method is not justified.

18. There are already “hot” alternative test methods existing which live up to the performance of the hot water bath test (see article in annex 3, reproduced in informal document INF.3). This should be taken into account by the UN transport recommendations.

III. CONCLUSION

19. The above-mentioned reasons show that there is a need to:

(a) limit the current “cold” alternative test method in the UN Model Regulations to tinplate cans only;
(b) include provisions for a “hot” alternative test method in the UN Model Regulations; and
(c) possibly develop an appropriate “cold” alternative test method for aluminium cans.

20. Together with other partners in the production chain AEROBAL will work on an appropriate proposal to modify the UN Model Regulations along these lines.

21. AEROBAL is aiming at submitting a first proposal at the December 2007 session of the Sub-Committee but is prepared to further explain its approach at the forthcoming July session.

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