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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

Twenty-sixth session
Geneva, 29 November-7 December 2004
Item 3 (c) of the agenda

OUTSTANDING ISSUES OR PROPOSALS OF AMENDMENTS TO THE TRANSPORT OF DANGEROUS GOODS

Miscellaneous proposals

Approval of Intermediate Bulk Containers

Strength of Single and Multi-Trip Composite Intermediate Bulk Containers (IBCs) with metal outer framework and plastic inner receptacle

Transmitted by the expert from Australia

SCOPE

This proposal aims to recommend:

- i. Examine possible amendments to Chapter 6.5 with the respect to testing of Composite Intermediate Bulk Containers:

RELATED DOCUMENTS

UN/SCETDG/23/INF.23 - (Australia) Approval of Intermediate Bulk Containers.

UN/ST/SG/AC.10/C.3/2003/56 - (Australia) Approval of Intermediate Bulk Containers.

UN/ST/SG/AC.10/C.3/2004/54 - (United Kingdom) Revision of 7.1.1 - Addition of loading and stacking provisions.

UN/ST/SG/AC.10/C.3/50 – (Secretariat) Report of the sub-Committee of Experts on its 25th Session

Introduction

1. The current trend in the manufacture of Intermediate Bulk Containers (IBCs) has seen a progressive move to “lightweight” composite Intermediate bulk containers (plastic inner receptacle and metal outer framework of types 11HZ1, 21HZ1 and 31HZ1) for the transport of liquid, and some dry dangerous goods, when carried in a Cargo Transport Unit (CTU). In an effort to minimise bulk, weight and cost; the metal outer frame structure is often limited to the minimum required to surround the inner receptacle and support another IBC stacked above it.
2. It appears that some “lightweight IBCs” are manufactured and marketed as a single trip IBCs. As an example the Hazardous Cargo Bulletin report, included in the August 2004 edition, lists the output from major composite IBC producers giving details of whether the product range included “Multi-trip” or “Single-trip” IBCs and whether a removable liner was available. Further evidence of a ‘dual standard’ has been provided by a supplier of composite IBCs who stated:

“..., regarding Multi trip and Single trip (limited Trip):- These are terms we use to differentiate the two products we offer. The Multi trip version is built in a more robust design and customers experience over 70 trips in five years. The single trip (limited trip) models are built with different fittings i.e different valve, pallet, cage and no top protector and therefore although UN approved for 5 years (subject to 2.5 yr. test) rarely last longer than 4-8 trips (less than one year in heavy usage) ...”.

3. Regardless of the designation used in their marketing all these IBC appear to have been approved for 5 years in accordance with Chapter 6.5 of the Model regulations. If an IBC is approved for 5 years in accordance with Chapter 6.5 but only really designed for a single trip then this is an issue of serious concern.
4. Experience with the use of lightweight composite IBCs in Australia has found that these units appear to be satisfactory in so far as their employment as containerised cargo (noting the stacking issues already discussed) but to not appear to be rugged enough for normal handling in road transport on an ongoing basis, noting that the IBC would have a nominal five year approval. Two major issues have been noted:
 - i. The lightweight metal cage and top cover is prone to damage which can result in loads being placed on the inner plastic receptacle; and
 - ii. The UV stabilisation of the inner plastic receptacle, while being satisfactory for CTU employment is often inadequate for ongoing use in exposed sunlight but the first evidence of reduced strength can be failure of serious degradation of the plastic receptacle.
5. In respect of strength it is assumed that these IBC have passed the relevant tests detailed in section 6.5.4, however, some of the failures call this into question. Australian Competent Authorities would be most interested if other countries have found any problems in this area.
6. In respect of UV, section 6.5.3.4.6. requires the package to be ‘adequately’ protected from UV radiation where relevant, however, there is no limitations prescribed for the use of packages with limited or no UV protection, nor any requirement that such packages be marked to indicate they have limited or no UV protection. In a country such as Australia, with high level of UV, this is a significant issue where many of the IBCs employed are imported.



Light weight IBC with minimum outer packaging, particularly on the upper surface, and specially designed pallet base

Proposal

7. That members provide comment, to the Australian representative at the Committee, if they have experienced problems with single use IBCs, or have any comments in relation to the issues mentioned in this submission.
 8. Based on comments received, Australia will consider whether to lodge a submission to recommend the testing regime needs to be reconsidered and whether more stringent requirements should be placed on the UV protection of IBCs using rigid plastic components.
 9. Australia is of the opinion that where a Composite or Rigid Plastic IBC has effective UV protection there could be considerable benefit in identifying the fact. We believe that considering the international nature of the use IBCs they should be able to withstand prolonged exposure to sunlight without degradation of the plastic inner receptacle. Alternatively where the package is intended for exposure the inner receptacle should have a limited life necessitating replacement before UV radiation could have significantly degraded its strength. In either case we believe that the inner plastic receptacle of a composite IBC (or a Rigid Plastic IBC) should be marked to indicate it has effective UV protection. IBC's that do not have effective UV protection should be limited to their employment to closed Transport Units.
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