

## 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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### PACKAGINGS (INCLUDING IBCS AND LARGE PACKAGINGS)

#### Additional information to the Report of the IBC Working Group (ST/SG/AC.10/C.3/INF 5) and proposals for further work

Transmitted by the International Confederation of Plastics Packaging Manufacturers (ICPP)

#### 1. Background

ICPP as representative of the manufacturers of rigid plastics and composite IBCs worldwide took part in the meetings of the UN Working Group on IBC Performance Tests in Paris and submitted own proposals which are listed in the position paper preparing the Paris meeting (see annex 4 of INF 5). This ICPP position paper included details on the IBC market and different IBC-types. With the present paper ICPP wants to give further information on IBCs to show the important role of composite IBCs for the functioning of worldwide distribution of dangerous goods. ICPP expects that the below stated facts and figures will help consider any modifications of IBC design tests with the necessary responsibility and with respect to their cost/benefit ratio.

In addition ICPP wants to make some proposals for the further work to amend the UN Model Regulations for IBC Performance Testing.

#### 2. Economic facts on the use of IBCs in the global transport of dangerous goods

- Worldwide production of all rigid plastics and composite IBCs per year: more than 7 million pieces
- Production of so-called light-weight composite IBCs, representing ca. 95% of the total market of rigid plastic and composite IBCs: ca. 6,5 million pieces
- Composite IBCs in service per year worldwide: ca. 15 million pieces
- Average filling rate of a composite IBC per year: ca. 3
- Quantity of filled goods in composite IBCs per year: ca. 45 billion litres \*
- ...of which dangerous goods (ca. 70%): ca. 32 billion litres
- Value of transported dangerous goods per year with average value of 5 Euro per litre: ca. 160 billion Euro

\* Corresponding to ca. 225 million fillings of steel drums per year.

### 3. **Proposals for the further work to amend the UN Model Regulations for IBC Performance Testing**

3.1 The report of the IBC Working Group and especially the position papers from the USA and the Netherlands show that there are no existing safety gaps with IBCs. The main causes for the failure of IBCs are

- leaking closures due to wrong torques
- handling mistakes and/or missing or incorrect load securing

Incident data documented and published by the US authorities show incident rates of ppm order. In the US position paper for the IBC working group it is stated:

“During the time period between 2000-2004 there were approximately 20 million shipments of dangerous goods in type UN 31 HA1, IBCs with 142 total incidents; **a total incident rate of 0,007 %**. If the rate of incidents due to failure of the inner receptacle is calculated the failure rate is reduced even lower to a rate of 0,0015%.”

A recent publication of a big German insurance company about risk analysis of transport insurances came to a similar result. Around 80 incidents with chemical products, due to faulty packaging, were registered during a period of 5 years. The costs of insurance for all incidents caused by faulty packaging and IBCs represented 0,0007% of the total costs of transport damages for all chemical products including non dangerous goods.

3.2 Although there are no safety reasons which would require modifications of the UN Model Regulations for IBC Performance Testing, ICPP supports such modifications or even proposes them if

- (a) they tend to adapt the Model Regulations to technical progress, e.g. basic requirements for the use of UV-stabilised plastic material for rigid plastic and composite IBCs;
- (b) a harmonization of the worldwide requirements can be reached to minimize international barriers of trade, e.g. introduction of a vibration test on the basis of revised ASTM D 999;
- (c) the text of the test requirements is clarified according to former practice, e.g. use of alternative test procedures for the leakproofness test before the IBC is put into service, at the two and a half year inspection and after repair.

3.3 In addition to the above-mentioned ICPP does not see any need for changes, especially quantitative requirements for deformations in conjunction with design type tests should be avoided, as

- they do not provide safety-related information for normal conditions of transport;
- consequent application of such principle also for several types of packaging would lead to most different percentage quotas with questionable relevance. First investigations made by ICPP members showed that the percentage of permanent deformation of packaging after stacking, leakproofness or hydraulic pressure test is much higher than that of IBCs.

ICPP asks the UN Sub-Committee to consider the ICPP remarks at the discussion of the report of the UN Working Group in Paris.

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