

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 3 (a) of the provisional agenda

PACKAGINGS (INCLUDING IBC'S AND LARGE PACKAGINGS)

Comments on UN/SCETDG/28/INF.5 (Report of the Informal IBC Working Group -Agenda item 2)
UV-degradation

Transmitted by the expert from Germany

During the Paris meeting, Germany supported the preparation of text, which has become part of the WG-report (pages 3-4). The main objective was to avoid a multi-level protection scheme with additional marking provisions in favour of a minimum protection level against UV-radiation for composite IBC's. This requirement would replace the existing option of protective measures. A threshold figure for the UV-exposure ("150 kcal/cm²") was introduced as an integral of UV radiation multiplied by time, representing 1 year (day per day) of solar exposure in regions like the Mediterranean or Florida and which was told to be state of the art of plastics resins used for the manufacture of composite IBC's. It was understood as a material requirement to be checked by a common laboratory test. To the estimate of the group this exposure would reasonably cover a lifetime of 5 years in most climates of the world, taking common practises of sheltered handling/shipment conditions into account.

The Working group considered that this proposal would need to be reviewed for correctness and with respect to implications for other types of packagings, vulnerable to solar radiation.

The expert from Germany submits the following results of this review:

1. Despite the fact that UV-protection of plastics resins by additives is common practise for German type composite IBC's and FIBC's, this may not be the case for other types of packagings, such as jerricans and bottles, where protection is given by the use of overpacks or a restriction of lifetime (packagings for consumer commodities). As a consequence, a generalised requirement for all types of packagings would have serious impacts on the existing practise without sufficient justification.
2. However, such limit for UV-protection by additives could be accepted as guidance on good engineering practise, but not as a minimum requirement.
3. Examples on other methods of protection should be added to a general requirement on UV-protection, such as the use of light-bracking overpacks, limitations of lifetime and others.
4. With respect to the standard/procedure used to demonstrate compliance with a limit several observations are relevant:

- (a) ISO 4892-2 or 4892-3 are recommended to be used, describing laboratory tests for an accelerated proof, using Xenon or UV-lamps, respectively;
 - (b) Some parameters need to be set in addition to these standards, such as background of the samples (bright, reflecting or dark), specification of test criterion (impact or tensile test), sampling (pressed plates or packaging cut-outs);
 - (c) The value of the limit should be specified as the UV-portion of the radiation. 150 kcal/cm² would relate to a figure of 130 MJ/m² UV exposure;
 - (d) As an alternative to a reference to these standards, combined with the mentioned additional criteria, a direct inclusion of a testing provisions could be added to the UN Test Manual.
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