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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 (a) of the agenda

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

Transport of gases

Use of aluminum alloy cylinders in Acetylene service

Transmitted by the expert from the United States of America

Background

1. In ST/SG/AC.10/C.3/2004/65 the expert from the United States of America recommended adding special provision "a" in P200 for the entries Acetylene, Dissolved (UN1001) and Acetylene, Solvent Free (UN3373) to exclude aluminum pressure receptacles from being used in acetylene service. During the July 2004 session, the Gases Working Group indicated that additional technical justification was needed before a decision could be made on the proposal at the December 2004 session (UN/SCETDG/25/INF.98). On this basis, the expert from the United States of America contacted manufacturers of acetylene cylinders to discuss the common processes used to autoclave and bake-out the porous mass during the manufacturing process.

2. We were informed that the autoclaving operation is conducted at 193 °C (380 °F) for 40-60 hours depending on the cylinder size. After the autoclaving operation, the bake-out operation takes place at 371 °C (700 °F) for another 50-70 hours.

3. Based deleterious effect on the strength of the aluminum as a result of the exposure of aluminum cylinders to the above temperature and duration of exposure, the expert from the United States recommends restricting aluminum cylinders from acetylene service.

Proposal

4. Add special provision "a" in P200 to entries Acetylene, Dissolved (UN1001) and Acetylene, Solvent Free (UN3373).

5. Amend 6.2.2.1.3 by deleting the reference to ISO 7866:1999 in the list of suitable cylinder shell types authorized for acetylene cylinders.

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