**Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals**

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# Material requirements regarding elongation for non-refillable cylinders – reaction to German paper ST/SG/AC.10/C.3/2014/15

**Transmitted by the European Cylinder Makers Association (ECMA)**

## Introduction

1. The German paper ST/SG/AC.10/C.3/2014/15, proposes to adopt figures for minimum elongation after fracture to the end of § 6.2.1.2.2 for refillable and non-refillable cylinders in addition to the essential requirements in ADR 6.2.1.2.2 that the material shall be resistant to brittle fracture.

The German proposal is the following:

"For refillable receptacles the minimum elongation at fracture shall be 14 % for steel and 12 % for aluminium or aluminium alloys. For non-refillable cylinders the minimum elongation at fracture shall be 9% for steel, 8% for aluminium alloys and 6% for aluminium."

## ECMA comments

ECMA does not support the German proposal for the following reasons:

2. We hold the view that the text in the regulation shall be limited to essential requirements, as is the case with the current wording. The detailed provisions how to meet the essential requirements of the regulations shall be specified in the referenced standards.

3. The German proposal sets a value of minimum elongation for refillable steel cylinders of 14%. This is incorrect. The current version of ISO 9809-2 which is referenced in the UN Model Regulations allows in clause 10.2.1 a value of not less than 12%.

4. It is the opinion of ECMA that an addition of specific minimum elongation figures to paragraph 6.2.1.2.2 is unnecessary and even not useful because the current 2nd sentence of this paragraph in ADR requires anyway: "The material shall be resistant to brittle fracture and to stress corrosion cracking as indicated in the design and construction technical standard"

5. We note that all standards for refillable pressure receptacles do contain elongation requirements and for non-refillable cylinders, where it is sometimes difficult to carry out tensile tests, there is a requirement foreseen in the burst test that the cylinder shall remain in one piece under bursting. This guarantees that brittle fracture is avoided. Therefore the German statement in paragraph 4 that "even very brittle material may be accepted for non-refillable cylinders ....." is also incorrect.