



**Comité d'experts du transport des marchandises dangereuses
et du Système général harmonisé de classification
et d'étiquetage des produits chimiques****Sous-Comité d'experts du transport des marchandises dangereuses****Quarantième session**

Genève, 28 novembre-7 décembre 2011

Point 4 a) de l'ordre du jour provisoire

**Propositions diverses d'amendements au Règlement type
pour le transport des marchandises dangereuses: emballages****Échantillons de récipients à pression: possibilité d'évaluation
de la conformité et du marquage «UN»****Communication de l'expert de l'Allemagne¹****Historique**

1. Le paragraphe 6.2.2 des Recommandations relatives au transport des marchandises dangereuses, Règlement type (dix-septième édition révisée) renvoie aux normes qui doivent être appliquées pour évaluer la conformité des récipients à pression «UN». Le paragraphe 6.2.3 donne la possibilité à des récipients à pression qui ne sont pas conçus, construits, contrôlés, éprouvés et certifiés conformément aux dispositions du paragraphe 6.2.2 d'être conçus, construits, contrôlés, éprouvés et certifiés conformément aux dispositions d'un code technique reconnu par l'autorité compétente et conformément aux dispositions générales du paragraphe 6.2.1.
2. Le paragraphe 6.2.3.2 stipule que les récipients à pression certifiés sur la base d'un tel code technique ne peuvent pas porter le symbole «UN» pour les emballages.
3. Des fabricants allemands «d'échantillons de récipients à pression» utilisés et transportés dans le monde entier, tous modes de transport confondus, par les industries de prospection pétrolière et gazière ont fait une demande de certification en vertu du paragraphe 6.2.3 du Règlement type de l'ONU et du paragraphe 6.2.5 du RID/ADR pour faciliter le transport. De tels «échantillons de récipients à pression» ne répondent pas complètement à la définition d'une «bouteille» car leur tête n'est pas cylindrique mais plate

¹ Conformément au programme de travail du Sous-Comité pour 2011-2012, adopté par le Comité à sa cinquième session (voir ST/SG/AC.10/C.3/76, par. 116, et ST/SG/AC.10/38, par. 16).

et leur fond convexe. Cela s'impose car ces «échantillons de récipients à pression» sont transportés sur site par des systèmes automatisés. De plus, ces récipients sont en titane, un métal léger qui ne fait pas encore partie des matériaux autorisés pour la construction de bouteilles par le paragraphe 6.2.2 et les normes auxquelles il renvoie.

4. Eu égard à leurs applications limitées et au petit nombre d'échantillons de récipients à pression produits, ils ne font l'objet d'aucune norme ISO ou EN et il ne faut pas s'attendre à ce qu'on en élabore dans un avenir prévisible.

5. Alors que le RID/ADR prévoit le libre transport entre tous les États membres et/ou les Parties contractantes et que les Directives 2008/68/CE et 2010/35/UE (relatives aux équipements sous pression transportables) assurent la liberté de transport et de mouvement au sein de l'Union européenne (EU) et de l'Espace économique européen (EEE), il n'existe aucune clause comparable dans le paragraphe 6.2.3 du Règlement type de l'ONU. L'autorité compétente peut reconnaître un code technique spécifique et permettre le transport dans et pour son pays d'utilisation uniquement, mais cela ne permet pas de lever les obstacles au transport mondial.

Proposition

6. Il est proposé de discuter de la mise au point d'une procédure permettant à l'autorité compétente d'homologuer un nouveau code technique (**CTO** = code technique homologué), qui devra être reconnu par tous les pays appliquant le Règlement type de l'ONU. Il faut introduire un marquage similaire conforme aux dispositions des paragraphes 6.2.1 et 6.2.2 et notamment une marque pour le transport mondial, à la manière du symbole d'emballage «UN».

7. Ce CTO doit être basé sur les dispositions des paragraphes 6.2.1 et 6.2.2 ainsi que, autant que possible, sur une norme appropriée qui y soit citée, avec indication de toute entorse nécessaire à ladite norme. Les écarts en matière de conception et de construction doivent être motivés et évalués dans le CTO. Un CTO ne doit pas conduire à une norme de sécurité inférieure à celle qui est fixée par les dispositions contenues dans le chapitre 6.2.

8. Le CTO doit tenir compte des différents aspects du contrôle périodique (notamment en ce qui concerne ses modalités et sa périodicité) ainsi que d'autres éléments supplémentaires à considérer pendant le transport (le cas échéant). Pour ce qui est du marquage, il est proposé de remplacer l'identification de la norme par les lettres «CTO...» suivies de l'identification du pays ayant accordé l'homologation et d'un numéro de référence.

9. L'Allemagne a déjà élaboré un tel code en se fondant sur le paragraphe 6.2.5 du RID/ADR. Le document **ATR D 1/11** qui s'y rapporte est présenté en annexe à titre d'exemple.

10. Le CTO sera publié par l'autorité compétente sur son site Web et également communiqué au secrétariat accompagné d'une traduction, au minimum en langue anglaise.

11. Un tel CTO ne doit pas être autorisé dans le cas des récipients à pression relevant déjà des paragraphes 6.2.1 et 6.2.2, qui renvoient eux-mêmes à des normes. Il pourrait servir dans les cas où le paragraphe 6.2.2 ne renvoie à aucune norme appropriée ou pour des aspects qui ne sont pas abordés dans une norme citée.

12. L'experte de l'Allemagne accueillerait avec intérêt les observations et suggestions des délégués, ainsi que toute information relative au bilan qu'ils tirent de ces «échantillons de récipients à pression» dans leurs pays respectifs. Elle souhaiterait soumettre à la quarante et unième session qui doit se tenir en juin 2012 une proposition basée sur les observations reçues.

Annexe

(anglais seulement)

ATR D 1/11 as granted by Germany according to 6.2.5 ADR/RID

Recognized technical code (Annerkanntes Technisches Regelwerk, ATR) for the construction, equipment, test, approval, marking and use of seamless sample pressure receptacles made of metallic materials

(ATR D 1/11)

Based on Section 8 No 10 of the Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB) of 17 June 2009 (Federal Law Gazette I p. 1389) as amended by the Ordinance of 4 March 2011 (Federal Law Gazette I p. 347), the Federal Institute for Materials Research and Testing (BAM) in agreement with the Federal Ministry of Transport, Building and Urban Development promulgates, in accordance with section 6.2.5 of RID and ADR¹, the recognized technical code for the construction, equipment, test, approval, marking and use of seamless sample pressure receptacles (ATR D 1/10) as set out below.

The Federal Institute for Material Research and Testing promulgates this ATR also based on Section 6 paragraph 5 of the Transport of Dangerous Goods by Sea Ordinance in the version promulgated on 22 February 2010 (Federal Law Gazette I, p. 238) as amended by Article 2 of the Ordinance of 3 August 2010 (Federal Law Gazette I p. 1139) in conjunction with sub-section 6.2.3.1 of the IMDG Code².

The present Code may be applied from the date of its publication in the Federal Ministry of Transport Gazette. The Federal Ministry of Transport, Building and Urban Development will submit this Code to the competent OTIF and UNECE³ Secretariats in accordance with section 6.2.5 of RID/ADR.

The present ATR may be applied to the approval of seamless sample pressure receptacles for carriage by rail, road, inland waterways and sea. This ATR shall not apply to transport by air.

1. Introduction

1.1 The reason for the elaboration of the present recognized technical code is the application of a manufacturer of specifically designed pressure receptacles that are used as sample pressure receptacles e.g. for the exploration of petroleum or natural gas. The

¹ RID = Regulations governing the international carriage of dangerous goods by rail
ADR = European Agreement concerning the international carriage of dangerous goods by road

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³ OTIF = Intergovernmental Organisation for International Carriage by Rail (OTIF)
= United Nations Economic Commission for Europe (Geneva)

samples have to be carried to specialized laboratories for analysis and these transport operations fall within the scope of dangerous goods legislation.

For the purpose described above, the specific pressure receptacles must be corrosion resistant to the fluids to be expected, able to withstand very high pressures, and easily usable under practical conditions.

1.2 In order to meet these requirements, alternative metallic materials of high tensile strength are to be used which do not meet the definition of "steel", e.g. titanium. Moreover, it is to be permissible to construct the sample pressure receptacles without bottle-like tapering (i.e. with flat ends).

1.3 For the construction, test and approval, a recognized standard for pressure receptacles should be used, if possible. With a view to the international use and the application also for materials of high tensile strength, standard ISO 9809-2:2000 was selected for this purpose: "Gas cylinders - Refillable seamless steel gas cylinders - Design, construction and testing; Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1100 MPa".

Permissible deviations from standard ISO 9809-2:2000 are determined below under No. 3. Wherever this is possible, reference is made to other internationally recognized standards.

2. Scope

2.1 The present ATR may be applied to the approval and use of seamless sample pressure receptacles of an alternative design for carriage by rail, road, inland waterways and sea. This ATR shall not apply to transport by air.

2.2 Seamless sample pressure receptacles under this ATR shall be constructed, equipped, tested, marked, approved, placed on the market and used for transport in accordance with the Ordinance on portable pressure equipment - OrtsDruckV - Article 1 of the Ordinance of 17 December 2004 (Federal Law Gazette I, p. 3711) as amended by Article 3 of the 5th Ordinance of 3 August 2010 (Federal Law Gazette I, p. 1389) amending ordinances on the transport of dangerous goods in conjunction with section 6.2.5 of RID/ADR as well as section 6.2.3 of the IMDG Code.

2.3 For conformity assessment, the procedure under section 1.8.7 and paragraph 6.2.3.6.1 of ADR/RID in the version applicable as of 1 July 2011 shall be applied.

3. Specification for the materials, design, manufacture and testing of seamless sample pressure receptacles

3.1 Definitions

3.1.1 Within the framework of the present Code, the definitions and characters (symbols) of sections 3 and 4 of EN 9809-2:2000 shall apply.

3.1.2 By derogation from standard ISO 9809-2, the tensile strength may be lower than 1,100 N/mm².

3.1.3 Therefore, in the application of the present recognized technical code, the term "high tensile strength" used in this ATR does not automatically mean that the tensile strength is greater than 1,100 N/mm².

3.2 General requirements

3.2.1 Seamless sample pressure receptacles of an alternative design made of alternative materials shall comply with the general requirements in sections 6.2.1, 6.2.3 and 6.2.5 of RID/ADR or 6.2.1 and 6.2.3 of the IMDG Code as well as the specifications of standard ISO 9809-2:2000 "Gas cylinders - Refillable seamless steel gas cylinders - Design, construction and testing; Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1100 MPa" as regards construction, equipment, test, marking, approval and use, unless deviations are explicitly permitted in the present ATR.

Note: The scope of the standard mentioned above is hereby extended to allow for wall thicknesses of the sample pressure receptacles which are greater than those determined in part 1 of the standard.

3.2.2 Seamless sample pressure receptacles of an alternative design may have special construction features required for its intended use, such as flat ends, and may be made of materials which do not meet the definition of "steel" (e.g. titanium).

3.3 Material requirements

3.3.1 Materials which do not meet the categories a) to c) defined in sub-section 6.1.1 of standard ISO 9809-2:2000 may be used if the material is resistant to ageing and corrosion resistant for the intended application. This shall be proven within the framework of a corrosion technical expert opinion by a testing agency of type Xa by applying recognized methods. If sufficient literature values are available, technical tests may be omitted.

Note: For similar possibilities, see sub-section 6.1.4 of standard ISO 9809-1:1999.

3.3.2 Any necessary thermal treatment shall be considered when drawing up the corrosion technical expert opinion. Furthermore, the possible effects of a wall thickness greater than that specified in the scope of standard ISO 9809-2:2000 shall be evaluated within the framework of the expert opinion.

3.4 Design of the seamless sample pressure receptacles

3.4.1 The specifications in section 7 of standard ISO 9809-2:2000 shall apply, unless otherwise stipulated in the following.

3.4.2 The notes in section 7.3 shall not be applied in order to allow for a greater wall thickness of the receptacles as described above under no. 3.2.

3.4.3 Forms of ends which deviate from the regular cylindrical form shall be proved by calculation in accordance with recognized standards and codes for the design of pressure receptacles. Where possible and applicable, standard EN 13445, as amended, shall be applied in this framework. If standard EN 13445 is partly not applicable or cannot be fully met, or if its application yields results which are not adequate with a view to safety, specification sheet AD 2000-B8 as published by the Arbeitsgemeinschaft Druckbehälter (pressure vessels working group) may be applied instead of the standard.

Note: The specification sheet can be obtained from Beuth Verlag, Berlin.

3.5 Manufacture

The specifications in section 8 of standard ISO 9809-2:2000 shall apply, unless otherwise stipulated in the following. In addition to the methods described in section 8.1 of standard ISO 9809-2:2000, the vessel may be manufactured by deformation machining of rods or tubes.

3.6 Type approval procedure

3.6.1 The provisions of RID/ADR as well as the specifications in section 7 of standard ISO 9809-2:2000 shall apply, unless otherwise stipulated in the following.

3.6.2 The verification of hardness/tensile correlation required in accordance with sub-section 9.2.3 of standard ISO 9809-2:2000 shall only be required if there is such a correlation for the used material and if a respective recommendation is given in the expert opinion stipulated under no. 3.3 of the present ATR.

Note: This test is not stipulated in standard ISO 9809-1:1999.

3.6.3 The flawed cylinder burst test required in accordance with sub-section 9.2.5 of standard ISO 9809-2:2000 shall also be carried out in the case that the tensile strength is lower than 1,100 N/mm².

Note: The test is not stipulated in standard ISO 9809-1:1999; it shall, however, be carried out for sample pressure receptacles, and, for materials of lower tensile strength, it provides a more solid verification basis than is prescribed in standard ISO 9809-1:1999.

On request of the manufacturer, a receptacle from the cycle test may be used for verification. In this case, the test may be repeated with a new receptacle if the receptacle develops a leak before having withstood the required burst pressure or the required number of cycles. In the case of failure by burst, the test shall be considered as “failed”.

3.6.4 The flawed cylinder cycle test required in accordance with sub-section 9.2.6 of standard ISO 9809-2:2000 shall only be required if the tensile strength exceeds 1,100 N/mm² or the expert opinion required under no. 3.3 of the present ATR contains such a requirement.

Note: This test is not stipulated in standard ISO 9809-1:1999.

4. Marking

The seamless sample pressure receptacles of an alternative design shall be marked in accordance with the provisions in chapter 6.2 of RID/ADR/ADN. Instead of the standard, the following shall be indicated: “ATR D 1/11”.

5. Periodic test and inspection and exceptional checks

5.1 Seamless sample pressure receptacles of an alternative design in accordance with the present ATR shall be subjected to the regular periodic tests and inspections and exceptional checks in accordance with RID/ADR. The test period stipulated in packing provision P 200 in chapter 4.1 for steel pressure receptacles shall apply.

5.2 The extension of the intervals between inspections in accordance with packing provision P 200 (10) v, or (12), shall, however, not be permitted.