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 **26 June 2013**

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Item 5 (c) of the provisional agenda
Transport of gases: composite cylinders

Consolidated proposals including comments on ST/SG/AC.10/C.3/2013/9 regarding life of composite cylinders

Transmitted by the European Industrial Gases Association (EIGA)

Introduction

1. To facilitate discussion, the following consolidates the proposals presented in ST/SG/AC.10/C.3/2013/9 (submitted by EIGA on behalf of the informal working group on life of composite cylinders) and the clarifications proposed in INF.12 (submitted by ISO) and INF.48 (submitted by CGA), as well as further clarifications proposed by the competent authority of Germany. (Clarifications to the original proposals are shown in double-underline and ~~double strikethrough~~.)

Proposals

1. Definitions

Add the following definitions for "service life" and "design life" in 1.2.1 of the Model Regulations:

> *Service life*, for composite cylinders, means the number of years the cylinder is permitted to be in service.
>
> *Design life*, for composite cylinders, means the maximum life (in number of years) to which the cylinder is designed and approved in accordance with the applicable standard.

2. 6.2.2.1.1 NOTE 1

Amend NOTE 1 of 6.2.2.1.1 of the Model Regulations as follows:

> ***NOTE 1:*** *In the above referenced standards, composite cylinders shall be designed for ~~unlimited service life~~ a design life of not less than 15 years.*

3. 6.2.2.1.1 NOTE 2

Replace NOTE 2 of 6.2.2.1.1 of the Model Regulations as follows:

~~***NOTE 2:*** *After the first 15 years of service, composite cylinders manufactured according to these standards, may be approved for extended service by the competent authority which was responsible for the original approval of the cylinders and which will base its decision on the test information supplied by the manufacturer or owner or user.~~

NOTE 2: ~~*The service life of a composite cylinder shall not be extended beyond its initial approved design life. Regardless of the cylinder design life*~~ *Composite cylinders with a design life longer than 15 years*~~*, composite cylinders*~~ *shall not be filled after 15 years from the date of manufacture, unless the design has successfully passed a service life test programme. The programme shall be part of the initial design type approval and shall specify inspections and tests to demonstrate that cylinders manufactured accordingly remain safe to the end of their design life. The service life test programme and the results shall be approved by the competent authority of the country of approval that* ~~*was*~~ *is responsible for the initial approval of the cylinder design. The service life of a composite cylinder shall not be extended beyond its initial approved design life.*

4. Marking

- Insert at the end of 6.2.2.7.4:

  (q) For composite cylinders having a limited design life, the letters "FINAL" followed by the design life shown as the year (four digits) followed by the month (two) digits separated by a slash (i.e. "/").

  (r) For composite cylinders having a limited design life greater than 15 years and for composite cylinders having non-limited design life, the letters "SERVICE" followed by the date 15 years from the date of manufacture (initial inspection) shown as the year (four digits) followed by the month (two) digits separated by a slash (i.e. "/").

  NOTE: *Once the initial design type has passed the service life test programme requirements in accordance with 6.2.2.1.1 NOTE 2, future production no longer requires this initial service life mark. The initial service life mark shall be made unreadable on cylinders of a design type that has passed the service life test programme requirements.*

- Insert at the end of the first indent of 6.2.2.7.5:

  "...except for the marks described in 6.2.2.7.4 (q) and (r) which shall be adjacent to the periodic inspection and test marks of 6.2.2.7.7.".

5. Test period

Revise (2) of P200 as follows:

(2) The following three tables cover compressed gases (Table 1), liquefied and dissolved gases (Table 2) and substances not in Class 2 (Table 3). They provide:

(a) The UN number, name and description, and classification of the substance;

(b) The LC50 for toxic substances;

(c) The types of pressure receptacles authorised for the substance, shown by the letter "X";

(d) The maximum test period for periodic inspection of the pressure receptacles.

NOTE: *For pressure receptacles which make use of composite materials, the maximum test period ~~periodic inspection frequencies~~ shall be 5 years. The test period may be extended to that specified in Tables 1 and 2 (i.e. up to 10 years), if approved ~~as determined~~ by the competent authority ~~which approved the receptacles~~ of the country of use.*

(e) The minimum test pressure of the pressure receptacles;

(f) The maximum working pressure of the pressure receptacles for compressed gases (where no value is given, the working pressure shall not exceed two thirds of the test pressure) or the maximum filling ratio(s) dependent on the test pressure(s) for liquefied and dissolved gases;

(g) Special packing provisions that are specific to a substance.

Service life test programmes

2. The informal working group discussed details regarding service life test programmes. As previously reported in UN/SCETDG/42/INF.23, there are already several service life test programmes specified by various competent authorities in Europe and North America, and there are currently significant differences between the details of these programmes. The working group agreed that it would be difficult to develop general guidelines regarding such service life test programmes and that it would be best for the time being for the details to be specified by the competent authorities.

3. In the meantime, a proposal will be made for descriptions of the existing service life test programmes to be published for information in an ISO Technical Report, and this may lead eventually to the development of an ISO standard.