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

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-ninth session


Item 10 (b) of the provisional agenda

Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals: tests and criteria for oxidizing liquids and solids

Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals

Thirty-first session

Geneva, 5 – 8 July 2016

Item 2 of the provisional agenda

Joint work with the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee)

Round Robin testing programme – UN Test O.2: (oxidizing liquids) and UN Test O.3 (oxidizing solids) provisional results from the programme and proposals for amendments to UN Test O.2 and UN Test O.3 descriptions

Transmitted by the expert from France

Introduction

1. During its seventh session the Committee approved the programme of work of its two sub-committees for the biennium 2015-2016 (see ST/SG/AC.10/42, para 15; ST/SG/AC.10/C.3/92, para 95; ST/SG/AC.10/C.4/56, annex III). This programme of work includes the tests and criteria for oxidizing liquids and solids.


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1 In accordance with the programme of work of the Sub-Committee for 2015-2016 approved by the Committee at its seventh session (see ST/SG/AC.10/C.3/92, paragraph 95 and ST/SG/AC.10/42, para. 15)
3. From this RRT programme, two steps were identified
   • Step 1: “Test O.2 test for oxidizing liquids” and
   • Step 2: “Test O.3 test for oxidizing solids”.

Two reports of progress were issued and presented accordingly, see
ST/SG/AC.10/C.3/2015/6 and informal document INF.39 (TDG Sub-Committee
47th session) for step 1 and ST/SG/AC.10/C.4/2015/12
for steps 1 and 2.

**Provisional results from the programme**

4. Step 1 was launched in February 2015 and ended in August 2015. Nine laboratories
   from five countries participated.
   • In a preliminary phase INERIS, France as leading laboratory for the RRT selected
     three cellulose candidates i.e. ARBOCEL B00, TECHNOCEL 150 and SIGMA
     C6288 as replacement substance of cellulose WHATMAN CF11;
   • The overall results indicated that the celluloses ARBOCEL B00 and TECHNOCEL
     150 were the best candidates and were judged to give results of equivalent quality
     compared to the ones with cellulose WHATMAN CF11.

5. It should be emphasized that with these new cellulose candidates some variations
   could be observed for allocating either packing group II or packing group III due to
   difficulties for differentiation between both packing groups.

6. In accordance with the anticipated approach for trying to select the same cellulose
   candidate(s) for UN Test O.2 and UN Test O.3, as cellulose WHATMAN CF11 was the
   unique cellulose used in both tests (see ST/SG/AC.10/C.3/2014/95-
   ST/SG/AC.10/C.4/2014/19, table in para 1), Step 2 was launched in September 2015 and is
   now nearly completed. Nine laboratories from six countries participated.

   Step 2 focused on the two cellulose candidates i.e. ARBOCEL B00 and TECHNOCEL 150
   selected in step 1.

7. From the first results obtained by various participating laboratories, it appeared that
   celluloses ARBOCEL B00 and TECHNOCEL 150 were not giving the best results in
   comparison with a third cellulose, TECHNOCEL 75, which was tested some time ago in
   UN Test O.3 when designing this test. For this reason, a meeting was organized on 15
   January 2016 for examining with laboratories participating in RRT step 2 and other
   interested bodies which additional testing was needed. It was then decided to extend the
   step 2 programme for testing additionally cellulose TECHNOCEL 75.

8. This extension of step 2 was immediately launched at the end of January –
   beginning of February 2016. It is anticipated to end in March–April 2016. Ten laboratories
   from seven countries are participating.

9. Among the specifications for the cellulose candidates for replacement, it was
   suggested that the particle size and apparent density should be retained, taking also into
   account the availability in various parts of the world.

10. Even through the RRT programme has not yet been fully completed, it is possible to
    derive first proposals from the actual results. The expert from France will issue later for the
    forthcoming sessions of both Sub-Committees an Informal document based on the full RRT
    programme results.
11. For UN Test O.1 (Test for oxidizing solids) which was not part of RRT Programme but is similar in principle to UN Test O.3, the same amendment as the one proposed to Test UN O.3 should be retained.

Proposals for amendments to UN Test O.2 and UN Test O.3 descriptions

Proposal 1

12. Replace in the UN Test O.2 description, i.e. in section 34.4.2.2.5 of the Manual of Tests and Criteria, ST/SG/AC.10/11/Rev.6, the following sentence:

"Dried, fibrous cellulose with a fibre length between 50 and 250 μm and a mean diameter of 25 μm, is used as the combustible material."

by the following sentence:

“Dried white cellulose, with a fibre mean diameter of ca. 25 µm, grain size ca. 100 µm, apparent density 150 to 200 kg/m³ and pH-value between 5 and 7.5 is used as the combustible material.”

Proposal 2

13. Replace in the UN Test O.3 description, i.e. in section 34.4.3.2.2 of the Manual of Tests and Criteria, ST/SG/AC.10/11/Rev.6 the following sentence:

"Dried fibrous cellulose with a fibre length between 50 and 250 μm and a mean diameter of 25 μm, is used as the combustible material."

by the following sentence:

“Dried white cellulose, with a fibre mean diameter of ca. 25 µm, grain size less than 100 μm, apparent density 170 kg/m³ and pH-value between 5 and 7 is used as the combustible material.”

Proposal 3

14. Replace in the UN Test O.1 description, i.e. in section 34.4.1.2.2 of the Manual of Tests and Criteria, ST/SG/AC.10/11/Rev.6 the sentence:

"Dried fibrous cellulose, with a fibre length between 50 and 250 μm and a mean diameter of 25 μm, is used as the combustible material."

by the following sentence:

“Dried white cellulose, with a fibre mean diameter of ca. 25 µm, grain size less than 100 μm, apparent density 170 kg/m³ and pH-value between 5 and 7 is used as the combustible material.”