



**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**

Geneva, 27 June – 6 July 2016

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 France¹****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.
2. The calendar for the Round Robin Testing (RRT) Programme in UN Tests O.2 and O.3 indicated by the expert from France in ST/SG/AC.10/C.3/2014/95-ST/SG/AC.10/C.4/2014/19 has been applied.

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.3/2015/49- 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."