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**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-eighth session**

Geneva, 30 November – 9 December 2015

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****Thirtieth session**

Geneva, 9 – 11 December 2015

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 – Test O.2: Test for  
oxidizing liquids and Test O.3: Test for oxidizing solids****Second report on progress****Transmitted by the expert from France<sup>1</sup>****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 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.
3. From this RRT programme, the Step 1: “Test O.2: test for oxidizing liquids.” is completed and the Step 2: “Test O.3: test for oxidizing solids.” is launched.

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<sup>1</sup> 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).

## Second report on progress

### Step 1: “Test O.2: test for oxidizing liquids.”

4. Following the invitation sent by INERIS (Institut National de l’Environnement Industriel et des Risques), France, in September 2014, eleven laboratories from seven countries have confirmed their willingness to participate in this RRT Programme.

5. As leading laboratory for the RRT INERIS selected three cellulose candidates as replacement cellulose in Test O.2 and shipped together with the final approved RRT Programme for Test O.2 (step 1) in February 2015. The names and grades of the reference substances and test samples of oxidizing liquids were defined in the programme but were not delivered by INERIS.

6. The results from the different participating laboratories for this step 1 were received mainly from end of April to mid of June 2015 and end of August for the latest one.

7. At this stage, the results of one laboratory have not been evaluated and are not yet part of the results presented below. However, the following trends can be observed:

(i) The results with the different celluloses for the three reference substances in Test O.2 are compared in Table 1 below, allowing comparison with results obtained with the cellulose grade WHATMAN CF11 to be replaced.:

Celluloses	WHATMAN CF11	ARBOCEL B00	TECHNOCEL 150	SIGMA C6288
	Time (ms)	Mean (ms)	Mean (ms)	Mean (ms)
<b>PG III</b>	4767	3005	3014	3126
<b>PG II</b>	2555	1672	1753	932
<b>PG I</b>	121	107	87	94

**Table 1:** Results for three cellulose candidates (after statistical treatment) compared to cellulose WHATMAN CF11

The values of the mean pressure rise time for the three cellulose candidates are lower than those obtained for the cellulose WHATMAN CF11. As first selection criteria, we decided to use the ratios of mean pressure rise times between packing groups: PG III / PG II, PG II / PG I and PG III / PG I. These ratios for celluloses ARBOCEL B00 and TECHNOCEL 150 remain similar to those obtained for cellulose WHATMAN CF11 while the ratios for cellulose SIGMA C6288 are more different.

(ii) The classification achieved for the three liquid samples of oxidizing substances tested in the frame of this RRT Programme with the different celluloses remain comparable:

- ✓ Perchloric acid 70% Div. 5.1 PG I ,
- ✓ Perchloric acid 40% Div. 5.1 PG II ,
- ✓ Sodium nitrate in aqueous solution at 45 % Not div. 5.1.

8. At this stage the celluloses ARBOCEL B00 and TECHNOCEL 150 were judged to give results of equivalent quality compared to the one with cellulose WHATMAN CF11. This was deemed to be encouraging to start with the next step (see para 10 to 14).

9. The values presented in Table 1 will be revised to incorporate the latest result. Then a proposal could be made later for some adjustments regarding the times taken as references for classification when comparing the times obtained with the replacement cellulose(s) and with the Whatman CF11 cellulose for the reference substances.

**Step 2: “Test O.3: test for oxidizing solids.”**

10. From the Step 1 (see para 4 to 9), as leading laboratory INERIS retained two of the three candidate celluloses as potential replacement of the WHATMAN CF11 cellulose.

11. Two other laboratories have expressed their willingness to join the RRT programme for the Step 2, which brings the number of participants to 13 labs from 9 countries.

12. A draft RRT Programme for Test O.3 (step 2) was circulated among the participants during August 2015. Based on the comments received, the final approved RRT Programme has been issued and samples of the two celluloses (TECHNOCEL 150 and ARBOCEL B00) have been shipped to the participating laboratories early September 2015.

13. The overall results from the participating laboratories are expected by November 2015 in order to present those first results to the Sub-Committees in November/December 2015.

14. The next steps of the RRT programme are identified in ST/SG/AC.10/C.4/2014/95-ST/SG/AC.10/C.3/2014/19, see table in para 1.

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