

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 Globally Harmonized
System of Classification and Labelling of Chemicals

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Items 2, 4 of the provisional agenda

Work of the Sub-Committee of Experts on the Transport of Dangerous Goods on its forty-first session

Note by the secretariat

Introduction

The Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee) considered during its forty-first session (25 June to 4 (a.m) July 2012) several matters of interest to the GHS Sub-Committee, as follows:

(a) **Explosives and related matters:**

Following a preliminary discussion in the plenary, most of the questions relating to this agenda item were referred to the working group on explosives, which met from 25 to 27 June 2012, in parallel to the plenary session of the TDG Sub-Committee, with Mr. E. De Jong (Netherlands) chairing.

The full report of the working group was circulated as informal document INF.67¹. The Sub-Committee took note of the report of the working group and approved its conclusions and adopted texts².

Extracts from the report of the working group containing proposals for amendment to the GHS or recommendations to the GHS Sub-Committee are reproduced in (sections 1 to 3 of this document).

Other issues dealt with by the working group on explosives included:

- Improvement of Test Series 8 (Ammonium Nitrate emulsion or suspensions or gel, intermediate for blasting explosives (ANE)) and Test Series 6 (assignment of substances or mixtures to Divisions 1.1 to 1.4 or exclusion from Class 1);
- Amendments to the screening test for substances that may have explosive properties;
- Improvement of the DDT Test and criteria for flash composition;
- Classification and transport of ammonium nitrate

¹ <http://www.unece.org/trans/main/dgdb/dgsub3/c3inf41.html>

² The relevant paragraphs of the report of the working group will be included in the final report of the TDG Sub-Committee on its forty-first session.

- Miscellaneous proposals related to transport of explosives (listing, packing instructions, special provisions, etc) and classification of fireworks
- (b) **Decision logic for classification of self-reactive substances and organic peroxides** (see section 4)
- (c) **Corrosivity criteria** (see section 5):
 - (i) Work of the joint TDG/GHS correspondence group on corrosivity classification
 - (ii) Assignment of categories/packing groups
- (d) **Aerosols: editorial correction to Chapter 2.3 of the GHS** (see section 6)
- (e) **Test for oxidizing solids** (see section 7)
- (f) **Water-reactivity (Test N.5)** (see section 8)
- (g) **Adoption of expert judgement and weight of evidence procedures into the UN Model Regulations** (see section 9)

1. Substances and mixtures with explosive properties which are exempted from classification as explosives

Document: ST/SG/AC.10/C.4/2012/4 – ST/SG/AC.10/C.3/2012/56 (Germany, United States of America and Canada)

During the last (December 2011) meeting the proposal to introduce a note in the GHS for substances and mixtures with explosive properties which are exempted from classification as explosives was discussed by both the TDG and the GHS sub-committee. Both sub-committees agreed to the principle of the proposal and welcomed an official document for the next session.

Conclusion:

The working group considered and supported the principles of the document for GHS purposes, and **concluded that the version in the 3rd column ("Changes by GHS") of the table in the annex to the document is the preferred solution.** The working group also **agreed that clear guidance of how to avoid the potential explosive hazard should be provided** (for example, "Do not heat under confinement")

Reference document: TDG/41/INF.67 (para.17): *Report of the working group on explosives*

Proposed amendments to the GHS

Chapter 2.1

In section 2.1.3, add a new note 2 under Table 2.1.2 to read as follows:

“NOTE 2: *Substances and mixtures with a positive result in test series 2 in the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part I, section 12, which are exempted from classification as explosives (based on their packaging [or other properties] and the results in test series 6 in the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part I, section 16) still have explosive properties. The user should be informed of these explosive properties in case the substance or mixture no longer meets the conditions for exemption [, e.g.] because the substance or mixture is removed from its packaging or it is repackaged. For this reason, the explosive properties of the substance or mixture should be communicated in Section 2 (Hazard identification) and Section 9 (Physical and chemical properties) of the Safety Data Sheet in accordance with Table 1.5.2, and other sections of the Safety Data Sheet, as appropriate.”*

Renumber the existing note under the table as Note 1.

Reference document: ST/SG/AC.10/C.4/2012/4 – ST/SG/AC.10/C.3/2012/56, Annex

2. Classification of desensitized explosives

Document: ST/SG/AC.10/C.3/2012/28 – ST/SG/AC.10/C.4/2012/1 (ICCA)

Informal document: TDG/41/INF.38 – GHS/23/INF.12 (Germany)

Noting that a special working group on desensitized explosives was scheduled on 3 July so that experts from the GHS Sub-Committee may be able to participate, it was agreed that the working group on explosives could proceed with a preliminary discussion of the documents

on the understanding that the conclusions should be transmitted to the working group on desensitized explosives before approval.

The outcome of the discussions and the conclusions of the working group on explosives are summarized in its report as follows:

“ICCA and Germany presented some background information regarding industrial nitrocellulose that included typical uses, acceptability in the workplace, transport classification, and the need for specific categories within the GHS. They also explained how industrial nitrocellulose is classified for storage in Germany. ICCA asked the working group to endorse its proposal to accept the German classification system of storage groups for development of a system of classification in the GHS. France recalled the need for a future generic system for classification of desensitized explosives, allowing a better assessment of new products.

Several experts agreed that the principle was acceptable for industrial nitrocellulose, but questioned the acceptability for other desensitized explosives as described in INF.38. Germany responded that the system has also been used for other desensitized explosives and that there is ample test data available. Germany agreed to provide an overview of substances where no test data is available.

Conclusion:

The working group unanimously agreed that the German classification system of storage groups was a good basis for development of a system of classification in the GHS and supported the ICCA proposal. However, should a new test be proposed, it should be in a separate appendix of the Test Manual, not applicable to transport classification. A number of experts are considering to prepare a formal proposal to deal with the details of implementation within the GHS system in the next biennium. The sub-committee is requested to include this in the list of work for the next biennium.”

These conclusions were transmitted to the working group on desensitized explosives before approval.

The Sub-Committee endorsed the conclusions of the Working Group on desensitized explosives as follows:

- (a) The conclusions of the Working Group on Explosives as reflected in INF.67, para. 6 (see conclusions above) were confirmed;
- (b) A new chapter on desensitized explosives in the GHS is needed;
- (c) The German methodology is a good starting point to develop a comprehensive approach;
- (d) The properties of the mixtures, when the diluent has fallen below the specified level need not be included in the classification method since they would then be considered as explosives;
- (e) A number of experts are considering to prepare a formal proposal to deal with the details of implementation within the GHS system in the next biennium.

Reference documents:

TDG/41/INF.67 (para.6): Report of the working group on explosives
TDG/41/INF.75 Report of the working group on desensitized explosives
ST/SG/AC.10/C.3/2012/CRP.1, paras.9–10
ST/SG/AC.10/C.3/2012/CRP.1/Add.7, paras. 74–78
ST/SG/AC.10/C.3/2012/CRP.1/Add.12, par.119

3. Difficulties in carrying out classification tests

Document: -TDG/41/INF.26–GHS/23/INF.10 (Explosives Working Group Chairman)

There was general support for the way forward proposed by the chairman of the working group. The working group noted that IME (with the USA and Canada) is already underway in regards of Test Series 6 and that AEISG has committed to work on Test Series 8. The UK commented that they may also have resources that could be devoted to the project. The working group agreed with the priorities put forward by the chairman. The chairman of the working group reconfirmed his willingness to coordinate this effort.

Conclusion:

The working group **endorsed the proposal of INF.26** that the sub-committees on TDG and GHS:

- (a) accept the general principle outlined in regards to Parts I and II of the Test Manual,
- (b) include this activity in their next programme of work, and
- (c) take action as deemed appropriate.

Reference document: TDG/41/INF.67 (para.25): Report of the working group on explosives

4. Decision logic for classification of self-reactive substances and organic peroxides

Document: ST/SG/AC.10/C.4/2012/3 – ST/SG/AC.10/C.3/2012/49 (ICCA)

The **proposed amendment to the decision logic was adopted.**

Reference document: ST/SG/AC.10/C.3/2012/CRP.1/Add.6, para.56

5. Corrosivity criteria

1. Work of the joint TDG/GHS correspondence group on corrosivity classification

Informal documents: TDG/41/INF.40 – GHS/23/INF.13 (United Kingdom)
TDG/41/INF.41 – GHS/23/INF.14 (United Kingdom)

The Sub-Committee **noted the report** on the work of correspondence group and a contribution from the expert of the United Kingdom to that work concerning approaches for classifying corrosive mixtures under Class 8 which would be useful to the work of the Joint TDG/GHS Working Group on corrosivity criteria that would meet on 4 July during the session of the GHS Sub-Committee.

Reference document: ST/SG/AC.10/C.3/2012/CRP.1/Add.11, para.110

2. Assignment of categories/packing groups

Informal document: TDG/41/INF.27 – GHS/23/INF.11 (CEFIC)
TDG/41/INF.53 – GHS/23/INF.18 (United Kingdom)

The representative of CEFIC said that she would withdraw her informal document if the suggestions of the United Kingdom in INF.53 were taken forward.

Nevertheless, delegations had divergent views on this proposal. It was recalled that for the supply sector the pictogram and the hazard statement required for categories 1A, 1B and 1C are the same, but the transport conditions for Packing Group I are much more stringent

than for packing groups II and III. Therefore some experts supported the United Kingdom's suggestion in INF.53.

Other experts did not agree with this suggestion as they felt that the current correlations between each category and each packing group ensured harmonization with the GHS and this should be the basis for any further development. It was pointed out that industry should provide more data showing evidence of the proposed correlation on the basis of currently classified substances. Furthermore it was unclear how substances would be assigned to Packing Group I, notably in case of self-classification under n.o.s entries.

These issues should be further discussed by the TDG/GHS Working Group.

Reference document: ST/SG/AC.10/C.3/2012/CRP.1/Add.11, paras.111–114, as amended

6. Aerosols: editorial correction to Chapter 2.3 of the GHS

Informal document: TDG/41/INF.11 – GHS/23/INF.7 (Sweden)

The Sub-Committee **noted the editorial corrections** proposed but felt that these should be discussed by the GHS Sub-Committee.

7. Test and criteria for oxidizing solids

Informal document: TDG/41/INF.43 – GHS/23/INF.17 (Germany)

Bearing in mind the difficulties for carrying out the O.1 Test because of the carcinogenic and oral acute toxicity of the reference substance (potassium bromate), and because the visual determination of the burning time is highly subjective, the Sub-Committee agreed that the proposed alternative test should be considered for inclusion in the Manual of Tests and Criteria.

Most experts considered that the alternative test should replace the current test O.1 after a transitional period. To determine this transitional period, test laboratories should provide information on when they should be able to replace the current test apparatuses.

It was suggested that ammonium nitrate should be excluded from the examples of results because of its explosive properties. Similarly, some experts felt that the negative results for potassium nitrate and sodium nitrate (prills) should be excluded since experience had also to be taken account in classification.

The observer from Chile expressed concern at the possible exclusion of larger particles sizes samples used for the test. He underlined that, to prevent the oxidizing effect, the industry was developing large particle size products, less oxidizing, and that this practice should be encouraged to improve safety.

The expert from Belgium requested that test results be made available. These tests results are available at the following address: www.bam.de/service/publikationen/publicationen_medien/fg22_round_robin_solid_oxidizer.test.pdf.

A member of the secretariat underlined that, should the Sub-Committee wish to include this new test in the Manual of Tests and Criteria at its session, it would also be necessary to prepare a proposal for all consequential amendments to the UN Model Regulations and the GHS.

Reference document: ST/SG/AC.10/C.3/2012/CRP.1/Add.12, paras.129–134, as amended

8. Water-reactivity (Test N.5)

Document: ST/SG/AC.10/C.4/2012/2 – ST/SG/AC.10/C.3/2012/46 (France)

Informal documents: TDG/41/INF.4– GHS/23/INF.4 (France)

TDG/41/INF.76 and –Add.1 (Chairman of the working group)
Report of the working group on water reactivity

The consideration of these documents was entrusted to a working group. The Sub-Committee endorsed the conclusions of the working group [as follows]³:

- (a) Continued sharing of data and experience

It was **agreed that interested competent authorities would continue to share data and experience relevant to this effort**. The representative from the United States indicated that upon awarding of the TRB contract, the contractor would be in immediate contact with BAM, INERIS, and other pertinent organizations engaged in research and analysis. In addition to the reports provided as annexes to this report the group noted the availability of several additional resources including a published report on the development of protective action distances for emergency response purposes⁴

- (b) Work towards consensus on improvements to current test method

Two separate issues were identified:

- (i) Identifying improvements to the current N.5 test method as it applies to evolution of flammable gases and;
(ii) Establishing relevant criteria and test methods for the evolution of toxic gases.

- (c) Outreach/Engaging of Affected Industry

It was **agreed that competent authorities should be encouraged to conduct outreach to affected industry including producers of water-reactive materials and test laboratories engaged in classification testing of Division 4.3 materials**. As a part of this work, the group agreed that identifying materials known to have water-reactive properties though not so classed under the current UN classification criteria.

- (d) Timelines

The group **agreed to continue collaboration inter-sessionally and report back on progress at the December TDG session** with a view towards bringing substantive proposals if possible during the upcoming 2013-2014 biennium

Reference document: ST/SG/AC.10/C.3/2012/CRP.1/Add.12, par.128

³ The secretariat reproduces the extracts from INF.76 as contained therein for information of the GHS Sub-Committee. The relevant conclusions of INF.76 will be included in the final report of the TDG Sub-Committee on its forty-first session.

⁴ http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Argonne_Report.pdf

9. Adoption of expert judgement and weight of evidence procedures into the UN Model Regulations

Informal document: TDG/41/INF.28 (CEFIC)

The Sub-Committee noted that the text prepared was extracted from the GHS. Some experts expressed support for the proposal, however, most experts were reluctant to adopt such a text on the basis of an informal paper and the Chairman suggested that **experts should discuss this issue with their counterparts in the GHS Sub-Committee.**

Reference document: ST/SG/AC.10/C.3/2012/CRP.1/Add.12, par. 121 as amended.
