

**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals**

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**Sub-Committee of Experts on the
Transport of Dangerous Goods**

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Item 9 of the provisional agenda

**Issues relating to 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**

Twenty-second session

Geneva, 7 – 9 December 2011

Item 2 (a) of the provisional agenda

**Updating of the Globally Harmonized System of
Classification and Labelling of Chemicals (GHS)
Physical hazards**

**Classification of desensitized explosives for the purposes of
supply and use**

Transmitted by the expert from Germany

Introduction

1. In December 2005 the expert from Germany first submitted a document identifying some issues not yet properly addressed in the GHS (ST/SG/AC.10/C.3/2005/36 and ST/SG/AC.10/C.4/2005/5), among them desensitized explosives. These are substances and mixtures which are wetted, diluted, dissolved or suspended with a phlegmatizing substance in order to reduce or suppress their explosive properties.

2. Desensitized explosives are currently not classified as such according to the GHS. For TDG some desensitized explosives are classified by listing as liquid desensitized explosives in class 3 or as solid desensitized explosives in division 4.1 – depending on their physical state and the agents used to achieve desensitization. However, even such desensitized explosives may become explosive under certain circumstances – especially after long term storage and during handling and use, e.g. when the phlegmatizing substance is removed or its concentration is decreased for example due to evaporation. And some desensitized explosives even have explosive properties in the desensitized state.

Developments up to now

3. Following the meeting in December 2005 the working group on explosives of the Sub-Committee TDG started working on the issue of desensitized explosives and the subject was taken up in the program of work for 2007 to 2008.

4. A first meeting of an informal working group on desensitized explosives was held in December 2007 and a further meeting took place in March 2008. The meetings were chaired by the chairman of the working group on explosives. A report on these meetings was submitted to the Sub-Committees TDG and GHS (see ST/SG/AC.C.3/2008/39 and ST/SG/AC.10/C.4/2008/9).

5. In its report the working group had concluded that classification of desensitized explosives preferably should be implemented outside the class of explosives and that therefore a new chapter in the GHS would be needed.
6. The group summarized the basic principles it had agreed on and outlined a first draft for consideration of desensitized explosives in the GHS including a decision logic (see the Annex to ST/SG/AC.10/C.3/2008/39 and ST/SG/AC.10/C.4/2008/9).
7. The Sub-Committee TDG agreed that further work was needed and that the informal working group on desensitized explosives should continue to meet. Also the Sub-Committee GHS agreed that the informal working group should continue to provide progress reports on the on-going work until a formal proposal is ready to be submitted for consideration by both Sub-Committees.
8. The Sub-Committee GHS kept classification of desensitized explosives in the program of work for 2009 – 2010 in cooperation with the Sub-Committee TDG and named Germany as lead country. The Sub-Committee TDG also kept the issue in the program of work, together with other issues related to explosives.
9. A further meeting of the working group on desensitized explosives was held in December 2008 as part of the working group on explosives. It turned out that some of the experts were not agreeing to the basic principles as outlined by the working group in their report of the previous two meetings.
10. In this meeting the group agreed to take a different approach and to use desensitized explosives that are listed as such for the transport of dangerous goods as a starting point in order to find some kind of a ranking of their hazards. Furthermore, it was agreed that all experts would check for relevant data supporting or contradicting this approach.
11. In July 2010 the expert from Germany submitted an informal document with results of tests carried out with desensitized explosives at BAM to both Sub-Committees (see UN/SCETDG/37/INF.54 and UN/SCEGHS/19/INF.23).
12. The Sub-Committee TDG was in favour of a working group meeting in 2011 to continue work on desensitized explosives, provided test data and test results on other substances were available. The Sub-Committee TDG also noted the Working Group on Explosives unanimous opinion that it is not appropriate to place this type of substances in the class of explosives.
13. Again the subject was taken up in the program of work for 2011 – 2012. The Sub-Committee TDG lists the issue desensitized explosives together with other issues as a sub-point under the work item explosives and related matters. The Sub-Committee GHS has a separate point for desensitized explosives in its program of work with the Sub-Committee TDG as focal point and Germany as lead country.
14. No further activities were reported since then.

Further proceeding and proposal

15. The problem of adequate classification of desensitized explosives, especially for the purposes of supply and use is still unsolved and remains to be important with regard to appropriate hazard communication enabling all users to take the appropriate precautions and protective measures. Some principles that are supposed to support the process of finding an adequate solution for the classification of desensitized explosives are outlined in the Annex to this document (they have been submitted before in UN/SCEGHS/13/INF.19 but might be helpful again because the work seems to be at a dead end at the moment).

16. During its meetings the working group on explosives generally receives a number of tasks and issues to tackle which have priority because the Sub-Committee needs the response of the working group on explosives until the end of the meeting. It therefore normally does not and cannot find the time to pursue the issue desensitized explosives actively by developing strategies and ideas and finally a proposal.

17. The expert from Germany therefore would like to clarify the situation with regard to that item of the program of work.

18. The Sub-Committees are therefore requested to state whether they want to have this work pursued or not. If they want the work to continue, the experts should bear in mind that the work can only continue with the participation of other experts and also other testing organisations. The Sub-Committees should also indicate the way in which they want the work to continue.

19. The Sub-Committees might consider to install a(n informal) working group that specifically deals with the classification of desensitized explosives. It should be kept in mind that the issue of desensitized explosives is largely linked to chemicals which are not used as (intentional) explosives. Furthermore, it would be beneficial if experts from both Sub-Committees would participate because experts on physical hazards are required as well as experts with a focus on supply and use.

Annex

Some general principles for the classification of desensitized explosives

- (a) If a substance, which is classified as an explosive and which is diluted with a solid or liquid substance (phlegmatizing substance), still fulfils the criteria for the class of explosives, it has to be classified as such. Such mixtures are not under discussion here.
- (b) If a substance, which is classified as an explosive and which is diluted with a solid or liquid substance, no longer fulfils the criteria for the class of explosives, it shall be (provisionally) considered as desensitized explosive. In the current provisions for the transport of dangerous goods such mixtures are classified as liquid desensitized explosives in class 3 or as solid desensitized explosives in division 4.1 based on a listing principle in the Dangerous Goods List or in an N.O.S. entry in connection with special provisions referring to appropriate test methods of the UN Manual of Tests and Criteria, e.g. UN test series 2 and 6). Need for action currently exists for the GHS.
- (c) A decision logic for the GHS should be worked out on the basis of the existing test methods of the UN Manual of Tests and Criteria.
- (d) Desensitized explosives shall fulfil certain requirements:
- The phlegmatizing substance must be distributed homogeneously in the whole the mixture;
 - (Accidental) re-concentration must be prevented;
 - The phlegmatizing substance must fulfil certain criteria to be defined (e.g. they must have a minimum boiling point).
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