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 **4 July 2014**

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Item 3 (d) of the provisional agenda
Classification criteria and related hazard communication: Dust explosion hazards

Dust explosion hazards: July meeting summary/minutes

Transmitted by the expert from the United States of America, on behalf of the informal correspondence group

I. Introduction

1. The correspondence group met during the 27th session of the Sub-Committee to discuss the definition and identify what criteria fit the definition.

II. Meeting summary

2. The group began the meeting using with the definition agreed upon in the May meeting, which was, "Combustible dust" means a substance or mixture that is in the form of finely divided solid particles that is liable to catch fire or explode upon ignition when dispersed in air [or other oxidizing medium].

At the conclusion of the May meeting, the U.S. agreed to review existing regulations and input from other exerts with regard to the text "or other oxidizing medium" in the definition. Neither the National Fire Protection Association nor the American Chemistry Council felt this text was necessary for the definition (see UN/SCEGHS/INF.17). Therefore, this portion of the definition was deleted.

3. The group also discussed the additional text suggested by a U.S. fire expert. That is, should the definition include a reference to "effective ignition" and/or "resulting in a flash fire?" The group felt that using the term "effective ignition" did not add value and may confuse others. Several experts had doubts that once an ignition did occur with these substances or mixtures that it would result in a flash fire. Therefore, neither of these suggestions were added to the definition.

Suggesting that the same principles used in the PCI group for simplifying the definition apply here, the group reviewed the definition, and tentatively agreed on the following (sown in track-changes). "Combustible dust" means a ~~substance or mixture that is in the form of~~ finely divided solid particles of a substance or mixture that is liable to catch fire or explode upon ignition when dispersed in air ~~[or other oxidizing medium]~~. The chair agreed to work with the PCI group to ensure the definition meets the criteria established by that working group.

4. The group had a lively discussion on how to identify what criteria fit the definition. Several suggestions were made, including the following:

- Consider test results, actual experience, and particle size
- Answer a series of questions to establish the criteria: Do you have a solid? Is it made of small particles? Will it form a dust? Does it ignite? Is there experience showing that it will or will not be explosive?

5. The group considered these various suggestions, expressing that they wanted clear criteria. They also talked about the value of the use of experience, explaining that it may add value to avoid unnecessary testing, and that this information may be necessary for industry to better understand what a dust is, the nature of the hazard, and what to do if they do have such a hazard.

6. Regarding the first suggestion one expert felt that test results provide criteria on their own right. Particle size should not be a criteria by itself, but it is an important factor. The expert suggested that experience, both positive and negative could provide beneficial information.

7. One expert reviewed the Explosion Protection Plan used by many industries in Europe. Another identified a similar approach used by the grain industry in the U.S., that of the grain handling standard. An expert noted that there are several well-developed test methods on the subject, suggesting that test methods from the U.S. and elsewhere be considered to identify dusts. Another expert agreed, and cited the use of Europe's ATEX regulation, as well as NFPA 654 and 677. This expert also explained that experience is very helpful when compounding materials. Finally, the expert noted the use of a Process Hazard Analysis to prevent incidents in their facilities.

8. One expert suggested the group create a flow chart to facilitate the study of those substances and mixtures that might be considered dust, and also granules or other materials that might, through friction or abrasion, be explosive. The expert suggested an information note be considered by the group to assess materials' capacity to create dust or explosions.

9. The group agreed to meet via teleconference in September or October. The chair agreed to send a doodle poll to help select the best meeting date. In addition, a thought starter for the next meeting will be developed taking into consideration the various suggestions to identify what criteria fit the definition, as well as some outstanding issues not discussed at the meeting.