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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 Globally Harmonized
System of Classification and Labelling of Chemicals

Seventeenth session
Geneva, 29 June – 1 July 2009
Item 2(a) of the provisional agenda

**UPDATING OF THE THIRD REVISED EDITION OF THE GLOBALLY HARMONIZED
SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS**

Physical hazards

Development of classification criteria for combustible dusts

Transmitted by the expert from the United States of America¹

Purpose

1. The purpose of this document is to propose that the Sub-Committee undertake the work of developing a specific classification scheme for combustible (explosive) dusts.

Background

2. Combustible dusts have been linked to several catastrophic explosions in the United States, and have occurred in a variety of industries including metal fabrication, plastics, furniture and wood products, and chemical manufacturing. In February 2009, a combustible dust explosion in a coal silo at a coal-fired power plant injured six employees in the state of

¹ In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.4/32, Annex II and ST/SG/AC.10/36, para. 14).

Wisconsin. In 2008, a sugar dust explosion and subsequent fire occurred at a sugar refinery plant in the state of Georgia, killing 14 people and severely injuring many others. In 2003, three dust explosions occurred in different industries, resulting in the deaths of 14 workers. Although these explosions involved different processes, they shared many common causes, suggesting a possible widespread risk across broad sectors of industry.

3. The GHS recognizes in Table 1.5.2(c) that combustible dusts are a hazard by requiring that they be identified on safety data sheets (SDS). It is also recognized in this table that no classification for combustible dusts exists in the GHS. Further, there is no guidance provided regarding the information to include on a SDS.

Further information supporting the need to classify combustible dusts

4. The United States Chemical Safety and Hazard Investigation Board (CSB), an independent federal agency that investigates industrial chemical accidents, conducted a study of combustible dust explosions in the United States. The study was initiated to examine the characteristics of the dust explosions that have occurred in general industry, and determine what can be done to reduce the risk of such explosions occurring. The study identified 281 combustible dust incidents between 1980 and 2005 that resulted in the deaths of 119 employees, 718 injuries, and extensive damage to numerous industrial facilities.

5. The study concluded that these dust explosions occurred because employers and managers were often unaware of the potential for dust explosions, or they failed to recognize the serious nature of potential dust explosion hazards in their facilities. The study also found that Safety Data Sheets (SDS) failed to communicate necessary information about combustible dust hazards or ways to prevent them.

6. Following the study, the CSB urged the Occupational Safety and Health Administration (OSHA) to intensify its focus on this hazard to better ensure safe and healthful working conditions in general industry. They also urged OSHA to communicate to the United Nations Sub-Committee of Experts on the GHS (UNSCE/GHS) the need to amend the GHS to address combustible dusts.

Focal point for combustible dust classification

7. Combustible dusts have the potential to present a physical hazard with severe consequences. This is primarily of concern in the workplace setting, which raises the question of the most effective and efficient mechanism for bringing appropriate expertise to bear in undertaking development of a classification proposal for this physical hazard.

8. As this hazard is workplace-specific, the United States proposes that this work be undertaken first by a correspondence group under the UNSCE/GHS. This would not be precedent setting for future physical hazards as this hazard does not affect transport and the expertise would not reside in the transport sector.

9. Since the subject matter experts on this topic from workplace authorities usually do not attend meetings of the UNSCE/GHS, the correspondence group will be conducted primarily via e-mail and periodic teleconferences. If necessary, subject matter experts could coordinate a meeting of the correspondence group around the regular meetings of the UNSCE/GHS.

10. The goal of the correspondence group would be to present to the Sub-Committee a classification scheme for combustible dust. The correspondence group will keep both Sub-Committees informed of the criteria and progress on the work by providing periodic updates.

11. The first step to initiate the work would be to survey the members of the Sub-Committee to determine if any countries have a definition of combustible dust, or criteria to classify such materials, that could form the basis for harmonization. For example, in the United States, there are definitions available from a voluntary national consensus standard developed by the National Fire Protection Association (NFPA), but there are no criteria in OSHA's hazard communication standard. The United States is willing to provide a subject matter expert from OSHA to lead this correspondence group.

Conclusion

12. Given the nature of combustible dusts, this hazard is not confined to United States industry and presents a problem in workplaces around the world. Recognizing the severity of combustible dust explosions, and following up on the recommendations of the CSB, the United States respectfully requests that the Sub-Committee consider undertaking the work of developing a classification scheme for combustible (explosive) dusts in the current biennium.

13. Without a clear, internationally accepted classification scheme, this hazard may be overlooked on SDS, placing people and facilities at great risk. Inclusion of combustible (explosive) dusts in the GHS will ensure that this hazard is classified and better understood and communicated. Therefore, the Sub-Committee is invited to consider:

- (a) Establishing a correspondence group to develop criteria to classify combustible dusts based on their potential to cause explosions in workplaces; and
 - (b) Surveying the membership of the Sub-Committee to determine already existing definitions and criteria that can form the basis for this work.
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