

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

7 April 2020

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

Fifty-seventh session

Geneva, 29 June-8 July 2020

Item 3 of the provisional agenda

Listing, classification and packing

**Request for a new UN number for cobalt dihydroxide powder
(see ST/SG/AC.10/C.3/2020/21)**

**Transmitted by the Responsible Packaging Management Association of
Southern Africa (RPMASA) and International Confederation of Plastic
Packaging Manufacturers (ICPP)**

This document contains the notes from the teleconference of 4 March 2020 and the list of participants in the intersessional informal group referred to in document ST/SG/AC.10/C.3/2020/2.

Annex I

Conference call with TDG Sub-Committee experts

(Wednesday 4th March 2020)

Introduction of participants:

*Hannes Demaré (Belgium)
Sjofn Gunnarsdottir (Netherlands)
Madonna Radi (Canada)
Natalie Cadotte (Canada)
David Lamarche (Canada)
Keith White (UK)
Kevin Leary (USA)
Ben Moore (USA)
Xiaoyu Li (China)
Marcel Neitsch (Germany)
Korinna Rowkowski (Germany)
Amy Parker (US Coast Guard)
Hillary Sadoff (US Coast Guard)
Liz Anderson (RPMASA)
Paul Marsh (Cobalt Institute & RPMASA)

Apologies:

Debra Kirk (Australia)
Remko Dardenne (Belgium)
Joachim Scheerlink (Belgium)
Genevieve Sansoucy (Canada)
Claude Pfauvadel (France)
Erwin Sigrist (CEFIC & Swiss Industry)
Shane Kelly (USA)
Tom Ferguson (COSTHA)
Thilo Klein (ICPP) & Chris Lind (ICPP)
Dieter Heitkamp (CEFIC)
Peter Schuurman (CEFIC)
Bruno Rosier & Jari Rama (RPMASA & CI)

*Hannes apologised that although he could hear all the discussion, he experienced microphone challenges & could not give verbal input. He emailed comments afterwards supporting most of the discussion.

New UN number(s), PSN and description

- RPMASA recapped discussions held during the December Sub-Committee meeting, where it had been agreed that a formal proposal should be put forward to the July meeting for a new UN number, or numbers specific to cobalt dihydroxide.
 - One possibility was to have two new numbers:
 - UN 35XX COBALT DIHYDROXIDE POWDER, INORGANIC SOLID, [TOXIC BY INHALATION] containing >10% respirable particles– Class 6.1 with PG I
 - UN 35XY COBALT DIHYDROXIDE POWDER MIXTURES, INORGANIC containing >10% respirable particles– Class 6.1 with PG I, PG II and PG III
 - The alternative was to use a single number:
 - UN 35XX COBALT DIHYDROXIDE POWDER, INORGANIC SOLID, and MIXTURES CONTAINING COBALT DIHYDROXIDE [TOXIC BY INHALATION] containing >10% respirable particles – Class 6.1 with PG I, PG II and PG III
- The US experts were not convinced about the need for UN 35XY or text in the PSN referring to mixtures, as the Model Regulations allowed mixtures to be carried under the same UN number as pure material. He said that he had not seen any data for mixtures to confirm a need for a separate UN number with all 3 Packing Groups so supported UN 35XX only.
- The UK expert stated that there was no need to state TOXIC BY INHALATION in the PSN as replication, and no need for UN 35XY as a separate entry for mixtures.
 - He reminded that for Transport mixtures should be tested/assessed for their properties separately and assigned the appropriate Class according to the test results.

- CI noted that using the existing UN 3288 N.O.S. entries raised the same problem for cobalt dihydroxide mixtures classified in PG I, as FIBC would not be allowed.
- The UK expert suggested that PG I mixtures could be covered by a Special Provision.
- The Canadian expert informed that Chapter 2.0.2.5 of Model Regulations provides for use of a named UN number to be applied to mixtures, as it states that where “the mixture meets the Classification criteria of a single predominant substance, shall be assigned the UN number and Proper shipping name of the predominant substance” in this instance UN 35XX
- The US experts noted that the LC50 of cobalt dihydroxide was very low, therefore even with significant “dilution” in a mixture the toxicity could still trigger classification in PG I as per 2.6.2.2.4.1, and therefore it could be expected that some mixtures would need to rely on the provisions in 2.0.2.5 to ship under UN 35XX potentially for PGI, II and III
- The Dutch and Canadian experts proposed to remove INORGANIC SOLID from the PSN as cobalt dihydroxide was by definition an inorganic solid.
- The Canadian and US experts suggested that there was no need to specify “containing >10% respirable particles” since this was part of the classification criteria, but they were not averse to leaving this wording in the UN number description.
- It was suggested that TOXIC BY INHALATION could be deleted from the PSN as is replicated by the use of >10% respirable particles and use of SP 354.
- CI noted that the wording had been proposed to assist in the practical application of the UN number, as it clarified the differentiation of the respirable powder which was classified under Class 6.1 from the coarser materials and pasty materials which had previously been agreed fell outside of being respirable so would continue to be transported under UN 3077 in Class 9.
- The Netherlands expert concurred that INORGANIC SOLID and TOXIC BY INHALATION were unnecessary as a replication if >10% respirable particles was included in the PSN, and questioned the inclusion of SP 354 – This material is TIH as this has previously only been used for liquids and vapours.
- The Canadian expert stated that this is a new situation for TIH solid / powder and believed that SP354 should be applicable to any physical form that was TOXIC by inhalation
- RPMASA summarised that one UN number would be proposed, with PSN and description:
 - **UN 35XX COBALT DIHYDROXIDE POWDER containing >10% respirable particles – Class 6.1 with PG I, PG II and PG III**

Packing Instruction, Special Packing Provision and Special Provisions

- RPMASA had received feedback from a number of the Sub-Committee experts regarding wording for the proposed new SPP BX to be used for PGI under the proposed new number UN35XX:
 - BX – this material may be transported in Flexible IBC’s of PG 13H3 or 13H4 which have been tested and authorised for PG I and that show no loss of content, or slight discharge during drop and topple test as per the criteria in 6.5.6.9.5b) and 6.6.6.11.5. The drop, topple and righting test shall be conducted using a fine powder [of similar particle size to that to be transported].
 - The German experts also commented that maybe an additional marking BX should be required on the FIBC as part of the certification code?
- The US experts noted that SPPs were normally used as restrictions on packaging which was otherwise authorised under a Packing Instruction.
 - Either way the purpose of proposing the SPP was to ensure use of only the specific FIBC’s that had been authorised as meeting PGI criteria, so they could confidently be considered safe.
 - However, he asked if it might make more sense to use IBC07, then use an SPP to authorise the FIBC of the specific type in question?

- RPMASA reminded that FIBC08 which allows all types of FIBC's was designated for UN3288 PGII & PGII hence the proposal for IBC08 with proposed new SPP BX to specify only use of lined FIBC's 13H3 or 4
- The Netherlands expert stated that cobalt dihydroxide was not a "classical" toxic by inhalation (TIH) substance, thus was not sure based on precedent about classifying dusts and mists under Class 6.1.
 - They suggested that there were four options for specifying packaging:
 - IBC07 with inclusion of specific FIBC
 - IBC08 with exclusion of all FIBC except the specific design
 - IBC99 with inclusion of specific FIBC
 - A new Packing Instruction specific to this substance – IBC10
- RPMASA reaffirmed that it was because of this difference in the case of cobalt dihydroxide that the US experts (Shane Kelly) had proposed considering wording in the Guiding Principles, so that the Sub-Committee would have some guidance as to how to address this unique type of case in the future.
- The German expert suggested that the proposed entry would be the first time to introduce packaging via an SPP, though to do so would not go against the Guiding Principles and maybe something should be added to the Guiding Principles regarding this for future use.
- Following the 4 proposed solutions, the US experts then proposed to apply IBC08, with an SPP excluding any FIBCs except the 13H3 and 13H4 in question.
- The Netherlands expert noted that the Model Regulations assigned some P number Packing Instructions for single UN numbers.
- The US experts agreed that this could be an option, however there might well be other substances on the horizon that could be classified in Class 6.1 with PGI due to TIH by dusts.
 - Furthermore the use of a specific PI number was only to exclude the use of a packaging for other substances for which the packaging was not suitable, whereas these FIBCs were suitable for many solid substances with lower or no toxicity, therefore it was preferable to stick with IBC08 and an SPP to exclude other FIBCs.
- The Netherlands expert stated that they thought SP 354 should not be used, since this had previously only been used for TIH liquids and vapours, and if the precedent was set for assigning SP 354 to dusts then there may be the need to re-evaluate entries for lots of other substances!?
- The Canadian expert expressed the opinion that SP 354 was relevant to all substances classified under Class 6.1, including substances with toxic vapours as well as dusts and mists.
- The Netherlands expert then proposed to include SP 354 in square brackets, to initiate further discussion by the Sub-Committee.
- RPMASA noted that SP 274, as used for UN 3288, was related to N.O.S. entries so would not be included.
- The Netherlands expert suggested that it was necessary to check *the rationale for including SP 223 in UN 3288 and other PG III entries*, since it should be self-evident that substances not meeting the classification criteria did not need to be transported as Dangerous Goods. ??
- RPMASA proposed that SPP B2 and B4 should be assigned to PG I in addition to BX – Australia had requested to include requirement for use of closed cargo units.
- The Canadian expert proposed that SPP B2 and B4 should be assigned to PG II and B3 should be assigned to PG III as for UN 3288.
- RPMASA proposed using 0 for Limited and E0 for Excepted quantities for PG I, and would include the same LQ & EQ values for PG II and III as for UN 3288.
- The US experts recommended including in the preamble an indication of the purpose of the PG II and III entries (such as future-proofing), since there was currently no evidence for cobalt dihydroxide materials that were classifiable in PG II or III.

- CI stressed that pure respirable cobalt dihydroxide would always be classifiable in PG I, as the Institute did not condone animal testing on every individual respirable consignment, and non-respirable materials were not classifiable under Class 6.1 at all.
 - However respirable mixtures containing cobalt dihydroxide might be tested and classified into PG II or III and assigned under UN 35XX based on the Chapter 2.0.2.5 Model Regulations.
- The German expert proposed to put back the reference to Model Regulations section 6.5 in the wording of the SPP. *Done see revised BX*
- The US expert noted that section 6.5 allowed a “slight discharge” in the drop and topple tests, and the wording of the SPP was designed to disallow any identifiable discharge.

Actions

- RPMASA would circulate an amended table to all for comments the next day, followed by notes of the discussions to circulate at the weekend.
- CI to follow up with Industry Members regarding composition and Classification of mixtures, and consider appropriate wording to indicate purpose of PGII and PGIII for mixtures as per US expert request
- Comments were requested from all by Thursday 12th in order to update the draft Working Document and circulate for final comments prior to submission to the Secretariat before 1 April deadline.

	Name and description	Class or division	Subsidiary risk	UN packing group	Special provisions	Limited & excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
								Packing instruction	Special packing provisions	Instructions	Special provisions
35XX	COBALT DIHYDROXIDE POWDER, [containing > than 10% respirable particles]	6.1		I	[354]	0	E0	P002 IBC08 <i>Alternate IBC10</i>	BX B2 B4	T6	TP33
35XX	COBALT DIHYDROXIDE POWDER, [containing > than 10% respirable particles]	6.1		II	[354]	500g	E4	P002 IBC08	B4	T3	TP33
35XX	COBALT DIHYDROXIDE POWDER, [containing > than 10% respirable particles]	6.1		III	223	5kg	E1	P002 IBC08	B4	T1	TP33

BX This material may be transported in Flexible IBC's of 13H3 or 13H4 which have been tested and authorised for PGI and that show no loss of content, or slight discharge during the drop and topple test as per the criteria in 6.5.6.9.5 b) and 6.5.6.11.5. The drop, topple and righting test shall be conducted using a fine powder of similar particle size to that to be transported.

Proposal for Alternate PI (this approach favoured by several experts including Belgium)

IBC10

Only Flexible IBC's of 13h3 or 13H4 which have been approved by the Competent Authority for PGI as per criteria 6.5.6.9.5.b) and 6.5.6.11.5 may be used (see 4.1.3.7).

BX as above

B2 For solid substances in IBC's other than metal or rigid plastics IBC's the IBC's shall be transported in closed cargo transport units.

B4 Flexible IBC's shall be sift-proof and water resistant or shall be fitted with a sift-proof and water-resistant liner.

Liz Anderson

7 March 2020

Annex II

List of participants in the COBALT DIHYDROXIDE intersessional informal working group

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