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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Fourteenth session,
Geneva, 8-18 December l997,
agenda item 4 (b))

GLOBAL HARMONIZATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Physical hazards

Addition of a Classification Pathway Identifier to the Proper Shipping Name for Explosives

Transmitted by the Observer from New Zealand

Introduction

At the thirteenth session of the Sub-Committee New Zealand present an informal paper INF.3. This paper outlined a number of concerns relating to the classification of Flammable and Reactive Substances in the proposed Globally Harmonized System. During the Working Group meeting, New Zealand was invited to present formal papers to the fourteenth session of the Sub-Committee.

New Zealand is currently developing Regulations for the Hazardous Substances and New Organisms (HSNO) Act. This Act implements the concepts and philosophy of the Globally Harmonized Chemical Classification System to New Zealand's Domestic Legislation. While developing these Regulations, we discovered some serious problems in applying the current UN transport classification criteria to the controls needed for worker, consumer and environmental safety.

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The difficulty arises from the UN classifications use of packaging to modify the risk and thus the classification of Self Reactive Substances. Workers and consumers will remove the Explosives from the packaging. Thus the current UN classification system does not provide an adequate level of safety for these parts of the Explosives lifecycle.

On careful examination of the classification flow chart (Figure 10.3 Manual of Test and Criteria) we have determined that there are a specific number of unique pathways through the flow chart for each exit point Divisions 1.1 to 1.6.

New Zealand's Position re the Globally Harmonized Classification System

New Zealand strongly supports the creation of a Globally Harmonized Chemical Classification System. We also strongly support the Terms of Reference of the CG/HCCS. Our position is stated in ST/SG/AC.10/C.3/1997/67.Add.1. This position is the same as the position presented in INF.3 at the thirteenth session on the Sub-Committee.

Proposal

That a unique pathway identifier be added to the Explosives Division number. This will clearly indicate the inherent hazards associated with the specific Explosive. These unique pathways are detailed in Annex..

There are

Sixteen (16) unique pathways through the flow chart which result in Division 1.1 classification
Sixteen (16) unique pathways through the flow chart which result in Division 1.2 classification.
Sixteen (16) unique pathways through the flow chart which result in Division 1.3 classification.
Sixteen (16) unique pathways through the flow chart which result in Division 1.4 classification.
Thirty Two (32) unique pathways through the flow chart which result in Division 1.4S classification.
Four (4) unique pathways through the flow chart which result in Division 1.5 classification.
Four (4) unique pathways through the flow chart which result in Division 1.6 classification.

We propose that the Division Number for Explosives are modified to include this unique pathway identifier. For example

ARTICLES, EXPLOSIVE N.O.S UN 0463, 1.1 D

would become

ARTICLES, EXPLOSIVE N.O.S UN 0463, 1.1 Dφ

As upper case letters are used to denote compatibility groups. This restricts the choice of pathway identifiers. To prevent confusion with existing markings it is suggested that the pathway identifier could be the following Greek letters

α β χ δ ε ϕ γ φ κ λ μ π θ σ τ ϖ ψ ζ

In the case of Division 1.4S two letters would have to be used to obtain 32 combinations.

For an example of the application of this pathway identifier see ST/SG/AC.10/C.3/1997/67

Justification

The Expert from Sweden (ST/SG/AC.10/C.3/1997/74) has provided examples that illustrates the need to clearly communicate the inherent explosive properties of explosives. In the extreme case detonators classified as Division 1.4S, revert to Division 1.1B, when the influence of packaging is removed.

This pathway identifier clearly identifies the properties of this Explosive Substance both in the laboratory test and in the packaged tests.

With this information readily available from the pathway identifier, appropriate safety measures can be taken in the workplace. The laboratory test results are significant as e the modifying effect of packaging has been removed.

By adopting the pathway modifier

worker and consumer safety will be enhanced. The ready availability of the test results (referenced from the pathway identifier) will allow a good estimation of the likely effects when packaging is either removed or modified.

The cost of adding this information would be negligible.

No new UN numbers need to be created.

There is minimal effect on the Marking, Labelling and Documentation required.

The need to make widely available the original test results is minimized as all the relevant information is readily available.

As the test results are immediately known from the pathway identifier, this will reduce the number of times the full test results will have to be submitted for Regulatory Approvals Hazard communication has been enhanced.

Minimum change has been made to the UN classification system.

We strongly believe that the current UN classification is not workable when applied to the protection of workers, consumers and the environment, when packaging is not utilized.

Recommendation

The Committee is urged to adopt the proposed pathway identifier for Explosives. This will ensure that the inherent hazards are clearly communicated. This will enable appropriate controls to be placed on these substances outside of the transport sector. In particular this will allow appropriate controls to be placed on these substances when transport packaging is not likely to be utilized.

Annex

Proposed modification to UN Classification

The tables below illustrate the 32 unique pathways through the flow charts Figures 10.2 and 10.3 of the Manual of Test and Criteria.

The first row is the path number. The remaining rows refer to the box numbers in figures 10.2 and 10.3

Division 1.1

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	8	8	8	8	8	8	8	8
4	4	4	4	4	4	4	4	9	9	9	9	9	9	9	9
5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10
6	6	6	6	6	6	6	6	11	11	11	11	11	11	11	11
8	8	8	8	8	8	8	8	18	18	18	18	13	13	13	13
9	9	9	9	9	9	9	9	24	19	19	24	15	15	15	15
10	10	10	10	10	10	10	10	25	23	20	39	16	16	16	16
11	11	11	11	11	11	11	11	26	25	21	40	18	18	18	18
13	13	13	13	13	13	13	13	27	26	23	25	24	19	19	24
15	15	15	15	15	15	15	15		27	25	26	25	23	20	39
16	16	16	16	16	16	16	16			26	27	26	25	21	40
18	18	18	18	18	18	18	18			27		27	26	23	25
24	19	19	24	24	19	19	24						27	25	26
25	23	20	39	25	23	20	39							26	27
26	25	21	40	26	25	21	40							27	
27	26	23	25	27	26	23	25								
	27	25	26		27	25	26								
		26	27			26	27								
		27				27									

Division 1.2

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	8	8	8	8	8	8	8	8
4	4	4	4	4	4	4	4	9	9	9	9	9	9	9	9
5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10
6	6	6	6	6	6	6	6	11	11	11	11	11	11	11	11
8	8	8	8	8	8	8	8	18	18	18	18	13	13	13	13
9	9	9	9	9	9	9	9	24	19	19	24	15	15	15	15
10	10	10	10	10	10	10	10	25	23	20	39	16	16	16	16
11	11	11	11	11	11	11	11	26	25	21	40	18	18	18	18
13	13	13	13	13	13	13	13	28	26	23	25	24	19	19	24
15	15	15	15	15	15	15	15	29	28	25	26	25	23	20	39
16	16	16	16	16	16	16	16		29	26	28	26	25	21	40
18	18	18	18	18	18	18	18			28	29	28	26	23	25
24	19	19	24	24	19	19	24			29		29	28	25	26
25	23	20	39	25	23	20	39						29	26	28
26	25	21	40	26	25	21	40							28	29
28	26	23	25	28	26	23	25							29	
29	28	25	26	29	28	25	26								
	29	26	28		29	26	28								
		28	29			28	29								
		29				29									

Division 1.3

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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4	4	4	4	4	4	4	4	9	9	9	9	9	9	9	9
5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10
6	6	6	6	6	6	6	6	11	11	11	11	11	11	11	11
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9	9	9	9	9	9	9	9	24	19	19	24	15	15	15	15
10	10	10	10	10	10	10	10	25	23	20	39	16	16	16	16
11	11	11	11	11	11	11	11	26	25	21	40	18	18	18	18
13	13	13	13	13	13	13	13	28	26	23	25	24	19	19	24
15	15	15	15	15	15	15	15	30	28	25	26	25	23	20	39
16	16	16	16	16	16	16	16	31	30	26	28	26	25	21	40
18	18	18	18	18	18	18	18		31	28	30	28	26	23	25
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25	23	20	39	25	23	20	39			31		31	30	26	28
26	25	21	40	26	25	21	40						31	28	30
28	26	23	25	28	26	23	25							30	31
30	28	25	26	30	28	25	26							31	
31	30	26	28	31	30	26	28								
	31	28	30		31	28	30								
		30	31			30	31								
		31				31									

Division 1.4

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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4	4	4	4	4	4	4	4	9	9	9	9	9	9	9	9
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8	8	8	8	8	8	8	8	18	18	18	18	13	13	13	13
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11	11	11	11	11	11	11	11	26	25	21	40	18	18	18	18
13	13	13	13	13	13	13	13	28	26	23	25	24	19	19	24
15	15	15	15	15	15	15	15	30	28	25	26	25	23	20	39
16	16	16	16	16	16	16	16	32	30	26	28	26	25	21	40
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24	19	19	24	24	19	19	24	34	33	30	32	30	28	25	26
25	23	20	39	25	23	20	39		34	32	33	32	30	26	28
26	25	21	40	26	25	21	40			33	34	33	32	28	30
28	26	23	25	28	26	23	25			34		34	33	30	32
30	28	25	26	30	28	25	26						34	32	33
32	30	26	28	32	30	26	28							33	34
33	32	28	30	33	32	28	30							34	
34	33	30	32	34	33	30	32								
	34	32	33		34	32	33								
		33	34			33	34								
		34				34									

Division 1.4S

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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6	6	6	6	6	6	6	6	11	11	11	11	11	11	11	11
8	8	8	8	8	8	8	8	18	18	18	18	13	13	13	13
9	9	9	9	9	9	9	9	24	19	19	24	15	15	15	15
10	10	10	10	10	10	10	10	25	23	20	39	16	16	16	16
11	11	11	11	11	11	11	11	26	25	21	40	18	18	18	18
13	13	13	13	13	13	13	13	28	26	23	25	24	19	19	24
15	15	15	15	15	15	15	15	30	28	25	26	25	23	20	39
16	16	16	16	16	16	16	16	32	30	26	28	26	25	21	40
18	18	18	18	18	18	18	18	35	32	28	30	28	26	23	25
24	19	19	24	24	19	19	24	36	35	30	32	30	28	25	26
25	23	20	39	25	23	20	39	37	36	32	35	32	30	26	28
26	25	21	40	26	25	21	40		37	35	36	35	32	28	30
28	26	23	25	28	26	23	25			36	37	36	35	30	32
30	28	25	26	30	28	25	26			37		37	36	32	35
32	30	26	28	32	30	26	28						37	35	36
35	32	28	30	35	32	28	30							36	37
36	35	30	32	36	35	30	32							37	
37	36	32	35	37	36	32	35								
	37	35	36		37	35	36								
		36	37			36	37								
		37				37									

Division 1.4S continued

17	18	19	20	12	22	23	24	25	26	27	28	29	30	31	32
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4	4	4	4	4	4	4	4	9	9	9	9	9	9	9	9
5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10
6	6	6	6	6	6	6	6	11	11	11	11	11	11	11	11
8	8	8	8	8	8	8	8	18	18	18	18	13	13	13	13
9	9	9	9	9	9	9	9	24	19	19	24	15	15	15	15
10	10	10	10	10	10	10	10	25	23	20	39	16	16	16	16
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26	25	21	40	26	25	21	40		37	33	36	33	32	28	30
28	26	23	25	28	26	23	25			36	37	36	33	30	32
30	28	25	26	30	28	25	26			37		37	36	32	33
32	30	26	28	32	30	26	28						37	33	36
33	32	28	30	33	32	28	30							36	37
36	33	30	32	36	33	30	32							37	
37	36	32	33	37	36	32	33								
	37	33	36		37	33	36								
		36	37			36	37								
		37				37									

Division 1.5

1	2	3	4
1	1	1	1
2	2	2	2
3	8	8	3
4	9	9	4
5	10	10	5
6	11	11	6
8	18	13	8
9	19	15	9
10	20	16	10
11	21	18	11
13	22	19	18
15		20	19
16		21	20
18		22	21
19			22
20			
21			
22			

Division 1.6

1	2	3	4
1	1	1	1
2	2	2	2
3	8	8	3
4	9	9	4
5	10	10	5
6	11	11	6
8	18	13	8
9	24	15	9
10	39	16	10
11	40	18	11
13	41	24	18
15		39	24
16		40	39
18		41	40
24			41
39			
40			
41			