



**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 Transport of Dangerous Goods****Forty-eighth session**

Geneva, 30 November – 9 December 2015

Item 3 of the provisional agenda

Listing, classification and packing**Organic peroxides****New formulations to be listed in 2.5.3.2.4 and 4.1.4.2, IBC 520****Transmitted by the European Chemical Industry Council (CEFIC)¹****Introduction**

1. Since several new peroxides and formulations have become commercially available, there is a need to update 2.5.3.2.4 and 4.1.4.2, IBC 520. A list of new products, proposed classification, the accompanying competent authority approval references and a summary of the supporting test data are given in the annex to this proposal.

Proposals

2. CEFIC proposes to include three new entries in 2.5.3.2.4, list of currently assigned organic peroxides, as indicated in 3 below. Further, CEFIC proposes to include some changes in packaging IBC520, as indicated in 4 below: four amended or new entries and a sentence to allow listed entries in IBC 520 to be transported in packagings of OP8.

¹ In accordance with the programme of work of the Sub-Committee for 2015–2016 approved by the Committee at its seventh session (see ST/SG/AC.10/C.3/92, paragraph 95 and ST/SG/AC.10/42, para. 15).

3. Proposed amendments to 2.5.3.2.4 List of currently assigned organic peroxides:

ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B 1 (%)	Inert solid (%)	Water	Packing Method	Control temperature (°C)	Emergency temperature (°C)	Number (Generic entry)	Subsidiary risks and remarks
ADD under: DIISOBUTYRYL PEROXIDE	≤ 42 as a stable dispersion in water					OP8	-20	-10	3119	
ADD under: DI-(4-TERT-BUTYLCYCLOHEXYL) PEROXYDICARBONATE	≤ 42 as a paste					OP7	35	40	3116	
ADD new entry: 1-PHENYL ETHYL HYDRO PEROXIDE	≤ 38		≥ 62			OP8			3109	

4. Proposed amendments to 4.1.4.2, Packing Instruction IBC 520

(a) Add to the third row the following text (gray shaded past is the sentence added):

The IBCs listed below are authorized for the formulations listed, provided that the general provisions of 4.1.1, 4.1.2 and 4.1.3 and special provisions of 4.1.7.2 are met. The formulations listed below may also be transported in packagings of OP8 (see 4.1.4, P520), with the same control- and emergency temperatures, if applicable.

(b) Add the following entries:

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency Temperature
3109	ORGANIC PEROXIDE TYPE F, LIQUID				
	ADD under entry:				
	tert-Butyl hydroperoxide, not more than 72% solution with water	31HA1	1000		
	ADD NEW entries:				
	2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, not more than 52% in diluent type A	31HA1	1000		
	3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane not more than 27% in a diluent type A	31HA1	1000		
3119	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED				
	ADD NEW entry:				
	tert-Amyl peroxy-2-ethylhexanoate, not more than 62% in a diluent type A	31HA1	1000	+15 °C	+20 °C

Annex

Test results of new organic peroxides and formulations to be added/amended (2.5.3.2.4 or IBC520)

No	Product	packaging	UN	Detonation	P/T / C.1	Deflagration / C.2	Koenen/ E.1	DPVT/ E.2	(mod) Trauzl F.3 or F.4 or F5	SADT (H.3 or H.4)	Competent Authority approval number
1	Diisobutryl Peroxide, ≤ 42% as a stable dispersion in water	OP8	3119	Test A.6 No propagation	<2170kPa , No	0.02 mm/s, No	<1.0 mm (A) Low	1.0 mm (10g), Low	F.4 4.6 ml, Low	H.4 0 °C (400ml)	NL TNO 09/DV3/264 0
2	Di-(4-tert-butylcyclohexyl) peroxydicarbonate, ≤ 42% as a paste	OP7	3116	Test A.1 Partial (100%)	<2170kPa , No	0.21 mm/s, No	< 1mm ("O"), No	<1.0 mm (10g), Low	n.a.	H.4 45 °C (400ml)	NL TNO 11EM/927
3	1-Phenyl ethyl hydro peroxide, ≤ 38% in diluent type B	OP8	3109	Screening procedure (test series E and F), No	<2170kPa , No	0.011 mm/s, No	<1.0mm ("A"), Low	1.0 mm (50g), Low	F.4 0.0 ml, No	H.3, isothermal calorimetry >75 °C,	NL TNO- DV 2011 C090
4	tert-Butyl hydroperoxide, not more than 72% solution with water	31HA1	3109	Test A.1 No propagation	<2170kPa , No	0.024 mm/s, NO	<1.0mm ("A"), Low	2.0 mm (10g) Low	F.3 21 ml, Low	H.3 isothermal calorimetry +65°C	NL TNO 09/DV3/260 2
5	2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, not more than 52% in diluent type A	31HA1	3109	Test A.1 No propagation (100%)	<2170kPa , No	0.075 mm/s, No	<1 mm ("B"), Low	<1 mm (10g) Low	F.5 26.6 J/g, Low	H.3 isothermal calorimetry +75°C	NL TNO 09/DV3/272 6
6	3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane not more than 27% in a diluent type A	31HA1	3109	Test A.1 No propagation	2501 ms Yes slowly (44%)	0.044 mm/s, No (44%)	1.0 mm (F) Low	<1.0 mm (10g), Low (30%)	F.4 2.2 ml, No	H.3 isothermal calorimetry 90°C	TNO 10DV3/104 3
7	tert-Amyl peroxy-2-ethylhexanoate, not more than 62% in a diluent type A	31HA1	3119	Test A.1 No propagation 100%	<2170kPa , No	0.138 mm/s, No	<1.0 mm (A) Low	3.0 mm (10g) Low	F.4 5.2 ml, Low	H.3 30°C	TNO 13EM/0729