

# UN/SCETDG/18/INF.32

---

Sub-Committee of Experts on the  
Transport of Dangerous Goods  
(Eighteenth session, 3-12 July 2000,  
agenda item 5 (d))

## MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

### Packagings

#### IBC Packing Instructions

#### Transmitted by the expert from the United States of America

#### **Background**

1. After reviewing all of the IBC packing instruction assignments in the Dangerous Goods List the expert from the United States believes that there are some discrepancies that need to be addressed by the Sub-Committee. Some of the discrepancies involve what appear to be editorial errors while others are more substantive and relate to the agreed rationalized approach for IBCs.

#### **IBC07**

2. IBC07 should be amended to allow the use of 11G fibreboard IBCs. US regulations currently allowed the use of 11G IBCs for many of the substances assigned to IBC07 (see list of IBC 07 substances attached as Annex 1) and industry practice has been to transport a number of dangerous goods assigned to IBC07 in such IBCs, in particular sodium cyanide and potassium cyanide. Review of US incident data indicates that transport of these substances in these IBCs has been without incidents involving failure of the packagings or loss of dangerous goods for at least 5 years. Fiberboard IBCs are considered to provide an equivalent level of safety as compared to other IBCs authorized in IBC07 (e.g.; wooden IBCs). All substances subject to IBC07 would be required to be transported in closed transport units when transported in fibreboard IBCs.

#### **Proposals**

3. In IBC07 add the following:

(5) Fibreboard (11G)

Under “**Additional requirement:**” the words “and fibreboard” should be added after the word “wooden”.

**Division 5.1 PG II substances**

4. At the December 1998 Committee meeting several compromises were made in the final hours in order to reach consensus on the IBC packing instructions. There appear to be discrepancies in the assignment of IBC packing instructions to Division 5.1 PG II substances. Some of these substances are assigned IBC06 while others are assigned IBC08. Currently in US regulations all 5.1 PG II substances allowed in IBCs are assigned IBC08. After reviewing the physical characteristics of these oxidizing solids, the expert from the United States finds there to be no reason for treating some of the oxidizing solids more severely than others. For instance, permanganates and perchlorates do not pose greater risk in transport than chlorites and chlorates. Perchlorates are generally more stable as compared to chlorates and do not give off more oxygen. Considering the physical characteristics, there does not appear to be any safety basis for applying different IBC instructions to substances in this group.

5. The IBC instructions are also not consistently assigned to PG I oxidizing solids. There are 5 PG I entries. Two substances are assigned to IBC05 and the three remaining substances are assigned IBC06. In particular there appears to be no logical reason why Sodium peroxide should be assigned IBC05 while Potassium peroxide is assigned IBC06. The expert from the United States does not support authorizing these strong oxidizers in composite IBCs with flexible inner receptacles and proposes that all 5.1 PG I substances be assigned IBC05.

**Proposals**

6. It is proposed to amend the IBC instructions for the following oxidizing solids:

UN #	PSN	Class	S.R.	PG	IBC packing instructions	
					current	proposed
1491	POTASSIUM PEROXIDE	5.1		I	IBC06	IBC05
2547	SODIUM SUPEROXIDE	5.1		I	IBC06	IBC05
2466	POTASSIUM SUPEROXIDE				IBC06	IBC05
1462	CHLORITES, INORGANIC, N.O.S.	5.1		II	IBC06	IBC08
1503	SODIUM PERMANGANATE	5.1		II	IBC06	IBC08
1508	STRONTIUM PERCHLORATE	5.1		II	IBC06	IBC08
1472	LITHIUM PEROXIDE	5.1		II	IBC06	IBC08
1470	LEAD PERCHLORATE	5.1	6.1	II	IBC06	IBC08
1461	CHLORATES, INORGANIC, N.O.S.	5.1		II	IBC06	IBC08
1447	BARIUM PERCHLORATE	5.1	6.1	II	IBC06	IBC08
1509	STRONTIUM PEROXIDE	5.1		II	IBC06	IBC08
1476	MAGNESIUM PEROXIDE	5.1		II	IBC06	IBC08
1489	POTASSIUM PERCHLORATE	5.1		II	IBC06	IBC08
1442	AMMONIUM PERCHLORATE	5.1		II	IBC06	IBC08
1475	MAGNESIUM PERCHLORATE	5.1		II	IBC06	IBC08
1445	BARIUM CHLORATE	5.1	6.1	II	IBC06	IBC08
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	II	IBC06	IBC08

UN #	PSN	Class	S.R.	PG	IBC packing instructions	
					current	proposed
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	II	IBC06	IBC08
1483	PEROXIDES, INORGANIC, N.O.S.	5.1		II	IBC06	IBC08
1449	BARIUM PEROXIDE	5.1	6.1	II	IBC06	IBC08
1515	ZINC PERMANGANATE	5.1		II	IBC06	IBC08
1502	SODIUM PERCHLORATE	5.1		II	IBC06	IBC08
1482	PERMANGANATES, INORGANIC, N.O.S.	5.1		II	IBC06	IBC08
1455	CALCIUM PERCHLORATE	5.1		II	IBC06	IBC08
1456	CALCIUM PERMANGANATE	5.1		II	IBC06	IBC08
1457	CALCIUM PEROXIDE	5.1		II	IBC06	IBC08
1516	ZINC PEROXIDE	5.1		II	IBC06	IBC08
2573	THALLIUM CHLORATE	5.1	6.1	II	IBC06	IBC08
2547	SODIUM SUPEROXIDE	5.1		I	IBC06	IBC08
1481	PERCHLORATES, INORGANIC, N.O.S.	5.1		II	IBC06	IBC08
2466	POTASSIUM SUPEROXIDE	5.1		I	IBC06	IBC08
1448	BARIUM PERMANGANATE	5.1	6.1	II	IBC06	IBC08

#### Class 4 substances

4. Several Class 4 substances appear to be improperly assigned. Proposals to rationalize these entries are provided in paragraph 7 of this paper.

7. The following is proposed:

UN #	PSN	Class	S.R.	PG	IBC packing instructions	
					current	proposed
1313	CALCIUM RESINATE	4.1		III	IBC06	IBC08
1314	CALCIUM RESINATE, FUSED	4.1		III	IBC04	IBC08
1330	MAGANESE RESINATE	4.1		III	IBC06	IBC08
1318	COBALT RESINATE PRECIPITATED	4.1		III	IBC06	IBC08
2714	ZINC RESINATE	4.1		III	IBC06	IBC08
2715	ALUMINIUM RESINATE	4.1		III	IBC06	IBC08
1339	PHOSPHORUS HEPTASULFIDE, <i>free from yellow or white phosphorus</i>	4.1		II	IBC04	IBC06
1341	PHOSPHORUS SESQUISULFIDE, <i>free from yellow or white phosphorus</i>	4.1		II	IBC04	IBC06
1343	PHOSPHORUS TRISULFIDE, <i>free from yellow or white phosphorus</i>	4.1		II	IBC04	IBC06
1340	PHOSPHORUS PENTASULFIDE, <i>free from yellow or white phosphorus</i>	4.3	4.1	II	IBC04	IBC06

**Miscellaneous**

8. The following proposals apply to various substances which appear to be improperly assigned:

For UN 3151, POLYHALOGENATED BIPHENYLS, LIQUID IBC02 should be changed to IBC03.

For UN 2315, POLYHALOGENATED BIPHENYLS, LIQUID IBC02 should be changed to IBC03.

UN2844 - Remove B2 (not intended for PG III substances of Class 4)

UN 3207 - delete B3 and B4 as they do not apply to IBC02

UN3280 - Delete B1 from the PG I liquid entry (PG I liquids are not authorized in IBCs)

ANNEX 1  
Substances Assigned “IBC07” in the UN 11<sup>th</sup>  
Sorted by Class, SR, and PG

UN#	Name	Class	Sub-Risk	PG	IBC	B
2624	MAGNESIUM SILICIDE	4.3		II	IBC07	B2
2813	WATER-REACTIVE SOLID, N.O.S.	4.3		II	IBC07	B2
2830	LITHIUM FERROSILICON	4.3		II	IBC07	B2
1390	ALKALI METAL AMIDES	4.3		II	IBC07	B2
3170	ALUMINIUM SMELTING BY-PRODUCTS or	4.3		II	IBC07	B2
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3		II	IBC07	B2
3078	CERIUM, turnings or gritty powder	4.3		II	IBC07	B2
1417	LITHIUM SILICON	4.3		II	IBC07	B2
1400	BARIUM	4.3		II	IBC07	B2
1393	ALKALINE EARTH METAL ALLOY, N.O.S.	4.3		II	IBC07	B2
1394	ALUMINIUM CARBIDE	4.3		II	IBC07	B2
1402	CALCIUM CARBIDE	4.3		II	IBC07	B2
1401	CALCIUM	4.3		II	IBC07	B2
1405	CALCIUM SILICIDE	4.3		II	IBC07	B2
1396	ALUMINIUM POWDER, UNCOATED	4.3		II	IBC07	B2
1436	ZINC POWDER or ZINC DUST	4.3	4.2	II	IBC07	B2
1699	DIPHENYLCHLOROARSINE, SOLID	6.1		I	IBC07	B1
1713	ZINC CYANIDE	6.1		I	IBC07	B1
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1		I	IBC07	B1
2570	CADMIUM COMPOUND	6.1		I	IBC07	B1
2316	SODIUM CUPROCYANIDE, SOLID	6.1		I	IBC07	B1
2471	OSMIUM TETROXIDE	6.1		I	IBC07	B1
1692	STRYCHNINE or STRYCHNINE SALTS	6.1		I	IBC07	B1
2628	POTASSIUM FLUOROACETATE	6.1		I	IBC07	B1
2629	SODIUM FLUOROACETATE	6.1		I	IBC07	B1
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1		I	IBC07	B1
1689	SODIUM CYANIDE	6.1		I	IBC07	B1
1680	POTASSIUM CYANIDE	6.1		I	IBC07	B1
1655	NICOTINE COMPOUND, SOLID, N.O.S. or	6.1		I	IBC07	B1
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1		I	IBC07	B1
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1		I	IBC07	B1
1575	CALCIUM CYANIDE	6.1		I	IBC07	B1
1570	BRUCINE	6.1		I	IBC07	B1
1565	BARIUM CYANIDE	6.1		I	IBC07	B1
1557	ARSENIC COMPOUND, SOLID, N.O.S., inorganic,	6.1		I	IBC07	B1
1544	ALKALOIDS, SOLID, N.O.S. or ALKALOID SALTS,	6.1		I	IBC07	B1
1626	MERCURIC POTASSIUM CYANIDE	6.1		I	IBC07	B1

3048	ALUMINIUM PHOSPHIDE PESTICIDE	6.1		I	IBC07	B1
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE,	6.1		I	IBC07	B1
3285	VANADIUM COMPOUND, N.O.S.	6.1		I	IBC07	B1
3284	TELLURIUM COMPOUND, N.O.S.	6.1		I	IBC07	B1
3283	SELENIUM COMPOUND, N.O.S.	6.1		I	IBC07	B1
3282	ORGANOMETALLIC COMPOUND, TOXIC, N.O.S.,	6.1		I	IBC07	B1
3281	METAL CARBONYLS, N.O.S., solid	6.1		I	IBC07	B1
3280	ORGANOARSENIC COMPOUND, N.O.S., solid	6.1		I	IBC07	B1
3278	ORGANOPHOSPHORUS COMPOUND, TOXIC,	6.1		I	IBC07	B1
3172	TOXINS, EXTRACTED FROM LIVING SOURCES,	6.1		I	IBC07	B1
2630	SELENATES or SELENITES	6.1		I	IBC07	B1
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE,	6.1		I	IBC07	B1
2642	FLUOROACETIC ACID	6.1		I	IBC07	B1
3027	COUMARIN DERIVATIVE PESTICIDE, SOLID,	6.1		I	IBC07	B1
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2781	BIPYRIDILUM PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID,	6.1		I	IBC07	B1
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2771	THIOCARBAMATE PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1		I	IBC07	B1
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1		I	IBC07	B1
3261	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.	8		I	IBC07	B1
2430	ALKYLPHENOLS, SOLID, N.O.S. (including C2-C12	8		I	IBC07	B1
3262	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S.	8		I	IBC07	B1
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8		I	IBC07	B1
3259	AMINES, SOLID, CORROSIVE, N.O.S. or	8		I	IBC07	B1
1905	SELENIC ACID	8		I	IBC07	B1
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE	8		I	IBC07	B1
1759	CORROSIVE SOLID, N.O.S.	8		I	IBC07	B1
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8		I	IBC07	B1