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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  
Transport of Dangerous Goods**  
(Twenty-first session, 1-10 July 2002  
agenda item 4)

**TRANSPORT OF SOLID SUBSTANCES IN BULK IN CONTAINERS**

**Carriage of infectious substances in bulk**

**Transmitted by the expert from the United Kingdom**

**Introduction**

1. At the December 2001 session of the Sub-Committee of Experts on the Transport of Dangerous Goods the expert from the United Kingdom presented ST/SG/AC.10/C.3/2001/38 which proposed the provisions for the transport in bulk of infectious substances, UN 2900 and UN 3291. This paper was referred to the lunchtime working group on substances in bulk, but was not reached. As mentioned in paragraph 2 of the introduction to the joint proposal produced by the United Kingdom and Germany on the transport of solid substances in bulk, this subject is being presented in a separate proposal as outlined below for consideration by the Sub-Committee.

**Background**

2. Current requirements for the packaging of UN 2900 and UN 3291 are addressed in Chapter 6.3 of the Model Regulations. There are no provisions for the transport of these substances in bulk. Recent experience in the United Kingdom suggests that while the existing Model Regulations may be sufficient for transporting most substances assigned to UN 2900 in normal everyday circumstances, they are insufficient when, for example, large quantities of animal carcasses need to be transported in exceptional circumstances in a short space of time.

3. The prime concern in the transport of any infectious substance is the risk of the spread of infection. That could occur not only as a result of a transport incident but also during normal conditions of transport where circumstances such as the substance not being sufficiently enclosed could allow the spread of infection to either humans or animals.

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4. In the case of UN 2900, however, the expert from the United Kingdom believes that the proposals suggested in the main paper produced by himself and the expert from Germany would offer sufficient general protection against any risks associated with such transport. Recent experience suggests that these substances could therefore be safely transported in bulk containers.

5. Similarly it has been an increasingly common practice in recent times in UK national transport to permit the transport of UN 3291 Clinical Waste collected in plastics sacks, by road in freight containers. The expert from the UK believes that the current proposals for solid substances in bulk would adequately address necessary safety requirements for such transport.

6. In the case of both UN 2900 and UN 3291 there may however be an additional hazard from residual liquids emanating from the material carried. It would be necessary therefore to ensure that bulk containers are leakproof either by design or by the fitting of a suitable liner. Further additional precautions to minimise leakage of substances may also be necessary, as specified below.

7. The expert from the United Kingdom proposes the following

### **Proposal 1**

Amend the title of Section 4.3.2 to include Division 6.2

Add a new paragraph 4.3.2.4 in the main paper for UN 2900 and UN 3291

#### 4.3.2.4 Bulk Goods of Division 6.2

- (a) Only closed bulk containers (including vehicles)( code [BK2]) shall be used. These goods shall be transported only in closed bulk containers which in addition have a rigid roof, side walls, end walls and floor. For UN 2900, sheeted bulk containers [BK1] shall be permitted provided that vehicles are not filled to maximum capacity to avoid substances coming into contact with the sheeting.
- (b) Closed and sheeted bulk containers, and their openings, shall be watertight by design or by the fitting of a suitable liner;
- (c) Bulk goods of UN 3291 other than that containing sharp objects shall be contained within the closed bulk container in UN type tested and approved sealed leak-proof plastics bags marked as suitable for solids of Packing Group II;
- (d) Bulk goods of UN 3291 containing sharp objects shall be contained in UN type tested and approved rigid packagings that are resistant to puncture;
- (e) Bulk goods of Division UN 3291 carried in rigid packagings and plastics bags together in the same closed bulk container shall be adequately segregated by a suitable rigid divider or compartment;
- (f) Bulk goods of UN 3291 may not be carried together with any other dangerous goods except UN 1851, UN 3248 and/or UN 3249 *[medicines]*;
- (g) Bulk goods of UN 3291 in plastics bags shall not be compressed in the closed bulk container in such a way that bags may be rendered no longer leak-proof;

- (h) Bulk goods of UN 2900 shall be thoroughly soaked in disinfectant before loading prior to transport,
- (i) Bulk goods of UN 2900 in a sheeted bulk container shall be covered by an additional top liner weighted down by absorbent material soaked in disinfectant.

Renumber the subsequent paragraphs in 4.3.2 accordingly.

**Proposal 2**

Add a new 7.1.6.2.3 as follows;

The manual handling of substances of Division 6.2 during loading and unloading shall be kept to a minimum to avoid unnecessary exposure to the dangerous goods.

**Proposal 3**

Add UN 2900 and UN 3291 to the list in Annex 2 of the paper

Consequential Amendments to the proposals in the main paper

Add ", 6.2" after "5.1" in the title of 4.3.2. both in the body of the text and in 2a) Proposals.

## Annex

UN No.	Name and description	Class or division	Subsidiary risk	UN	RID/ADR packing group	IMO	CFR	D	Bulk container codes
(1)	(2)	(3)	(4)	(5)					
2900	INFECTIOUS SUBSTANCE AFFECTING ANIMALS only	6.2							[BK]1
3291	CLINICAL WASTE, UNSPECIFIED, N.O.S., or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, NOS	6.2		II					[BK]2