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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Geneva, 5-16 July 1999, agenda item 5 (a)(ii))

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

Listing and Classification

Ammonium Nitrate Fertilizer

Transmitted by the Expert from Canada

Introduction

1. The expert from Canada has undertaken a detailed review of the basis for classification of Ammonium Nitrate in the United Nations Recommendations on the Transportation of Dangerous Goods. After meetings with North American fertilizer groups with input from the European fertilizer industry, it is apparent that a simplification of the entries for Ammonium Nitrate is not only possible but desirable.

Discussion

2. Although Ammonium Nitrate is presently classified as an oxidizer, Class 5.1, the test applicable to solid oxidizers in the Manual of Tests and Criteria is inappropriate. The oxidizing properties of Ammonium Nitrate only arise at elevated temperatures and the test simply does not reach those temperatures. It is generally accepted that even given this anomaly in the properties of Ammonium Nitrate, it should remain classified as 5.1.

3. The use of the word “fertilizer” when referring to mixtures containing Ammonium Nitrate is misleading in that it defines an end use for the product. To harmonize with other entries in the DANGEROUS GOODS LIST it is suggested that the term “Ammonium Nitrate Fertilizers” be replaced by “Ammonium Nitrate Mixtures”. The same Ammonium Nitrate mixture normally sold for agricultural purposes could equally be used in an industrial process. No greater or lesser risk is defined by the ultimate use of the product. The physical and chemical properties of the dangerous good establish the risk.

Proposal

4. Initial analysis has resulted in the following proposal:

(i) Amend the present entries for Ammonium Nitrate and Ammonium Nitrate Fertilizers as follows:

UN No. (1)	Name and description (2)	Class or division (3)	UN Packing Group (5)	Special Provisions (6)
0223	AMMONIUM NITRATE MIXTURE, which is more liable to explode than ammonium nitrate with combustible substances equal to not more than 0.2% of the ammonium nitrate	1.1D		
1942	AMMONIUM NITRATE with not more than 0.2% combustible substances	5.1	III	
2067	AMMONIUM NITRATE MIXTURE when it has been formed to a specific shape such that the prills are of similar size and density and the added matter is inorganic and chemically inert towards ammonium nitrate, with not less than 70% ammonium nitrate and not more than 0.2% combustible material	5.1	III	186 208
2071	AMMONIUM NITRATE MIXTURE when it has been formed to a specific shape such that the prills are of similar size and density, and the added matter is inorganic and chemically inert towards ammonium nitrate, with less than 70% ammonium nitrate and less than 0.4% combustible material	9	III	186 193 208

(ii) The following Special Provisions are to be applicable to Ammonium Nitrate and its mixtures:

186 In determining the ammonium nitrate content, all nitrate ions for which a molecular equivalent of ammonium ions is present in the mixture shall be calculated as ammonium nitrate.

208 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10% ammonium nitrate and at least 12% water of crystallization, is not subject to these Regulations.

193 Ammonium nitrate mixtures of this composition and with less than 45% ammonium nitrate are not subject to these Regulations provided that they do not contain an excess of nitrate greater than 10% by mass (calculated as potassium nitrate).

5. Further detail and possible refinement of this proposal will be provided in a formal submission for the December Committee meeting.

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