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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Fifteenth session,
Geneva, 29 June-10 July l998,
agenda item 5)

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

Classification of ferrosilicon products of Division 4.3

Transmitted by the Expert from Norway

Introduction

Ferrosilicon products with 30 - 90 % silicon are assigned to UN 1408. According to special provision 40, Ferrosilicon of 70 -90 % can be exempted provided that the competent authority is satisfied by the results of tests that dangerous gases will not be evolved.

New production methods and new formulations of Ferrosilicon products have been developed by industry. Despite having a silicon content of 30 - 70 %, these products have an evolution rate of flammable gas well below the classifying criteria. The test results presented in the annex show an evolution rate of flammable gas in the range of 0.01 - 0.16 litre per kilogram of substance per hour, which is very low compared with the classifying criteria for Division 4.3 of more than 1 litre per kilogram of substance per hour.

These test results demonstrate that a number of Ferrosilicon products have a very low degree of danger. In several dangerous goods regulations, as in land transport in Europe, in the United States of America and Australia, there is a possibility to exempt such a product if it passes the test in the UN Recommendations on the Transport of Dangerous goods, Manual of Tests and Criteria.

On this basis the DSC 3 at IMO decided to introduce a possibility to exempt Ferrosilicon products in packaged form from the requirements of the IMDG Code, by introducing the following text under “Observations” for UN 1408:

> “The provisions of this Code should not apply to a consignment of Ferrosilicon carried in packaged form if it passes the test for class 4.3 as reflected in the United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria Part III - 33.4.1.4 and is accompanied by an appropriate certificate stating that the product was correctly tested and has passed the test.”

In sea transport it is important to distinguish between packaged goods and transport in bulk. Since the UN Recommendations (see paragraph 1 on page 1 of the 10. revised edition) does not include transport in bulk, it is not necessary to specifically mention that the Ferrosilicon products shall be carried in packaged form. Special provision 223 therefore should be used for such an exemption provision in the UN Recommendations.

Proposal

It is proposed to add special provision 223 to UN 1408, and to delete special provision 40.

Special provision 223:

If the chemical or physical properties of a substance covered by this description are such that when tested it does not meet the established defining criteria for the class or division listed in column (b1), or any other class or division, it is not subject to these Regulations.

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Annex

Tests on different ferrosilicon products according to the United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria Part III - 33.4.1.4 - Test N.5: Test method for substances which in contact with water emit flammable gases.

**Tests performed by ELKEM R&D Lab,
under control of Det Norske Veritas 1997**.

Alloy	%Si	%Mg	%Al	%Ca	%Re	%Ba	%Zr	%Sr	%Mn	Gas.eval. l/kg/h
REMAG	45.95	3.52	0.5	0.36	2.13					0.016
BJOMET 8	45.85	5.92	0.70	0.99	1.01					0.052
BJOMET 11	45.84	9.70	0.83	1.0	1.08					0.108
COMPACTMAG	46.10	5.5	0.7	1.90	6.10					0.056
BJOMET 8, fines	45.85	5.92	0.70	0.99	1.01					0.157
RESEED	75.00	0.1	1.1	0.75	2.05					0.070
ALINOC	72,5		4.0	1.2						0.017
FOUNDRISIL	75.2		1.2	1.2		1.1				0.032
BARINOC	74.5		1.2	1.5		2.5				0.037
FOUNDRIGRADE	75.4		1.2	0.7						0.027
INOCULIN 25	66.0		0.9	1.3		0.5	4.2		3.7	0.050
INOCULIN 80	74.0		1.2	2.5			1.5		0.3	0.064
SUPERSEED 50	48.0		0.2	0.03				0.8		0.012
SUPERSEED 75	75.0		035	0.04				0.9		0.060
SUPERSEED EXTRA	76.0		0.3	0.09				0.9		0.073