

RESOLUTION MSC.318(89)  
(adopted on 20 May 2011)  
ADOPTION OF AMENDMENTS TO THE INTERNATIONAL MARITIME  
SOLID BULK CARGOES (IMSBC) CODE

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THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MSC.268(85) by which it adopted the International Maritime Solid Bulk Cargoes Code (hereinafter referred to as "the IMSBC Code"), which has become mandatory under chapters VI and VII of the International Convention for the Safety of Life at Sea (SOLAS), 1974 (hereinafter referred to as "the Convention"),

NOTING ALSO article VIII(b) and regulation VI/1-1.1 of the Convention concerning the amendment procedure for amending the IMSBC Code,

HAVING CONSIDERED, at its eighty-ninth session, amendments to the IMSBC Code, proposed and circulated in accordance with article VIII(b)(i) of the Convention,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IMSBC Code, the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2012, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2013 upon their acceptance in accordance with paragraph 2 above;
4. AGREES that Contracting Governments to the Convention may apply the aforementioned amendments in whole or in part on a voluntary basis as from 1 January 2012;
5. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
6. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization which are not Contracting Governments to the Convention.

**ANNEX**

**AMENDMENT 01-11 TO THE INTERNATIONAL MARITIME  
SOLID BULK CARGOES (IMSBC) CODE**

**APPENDIX 1**

**INDIVIDUAL SCHEDULES OF SOLID BULK CARGOES**

**ALUMINIUM FERROSILICON POWDER, UN 1395**

**PRECAUTIONS**

- 1 In the second sentence, the words "competent Authority" are replaced by the word "Administration".

**ALUMINIUM NITRATE, UN 1438**

**PRECAUTIONS**

- 2 At the end of the paragraph, the following sentence is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

**ALUMINIUM SILICON POWDER, UNCOATED UN 1398**

**PRECAUTIONS**

- 3 In the second sentence, the words "competent Authority" are replaced by the word "Administration".

**AMMONIUM NITRATE UN 1942**

**with not more than 0.2% total combustible substances including any organic substance calculated as carbon, to the exclusion of any other added substance**

**DESCRIPTION**

- 4 The words "Supporter of combustion. Hygroscopic." are deleted.
- 5 A new note after Description is added, as follows:

**"Note:**

This schedule should only be used for substances that do not exhibit properties of class 1 when tested in accordance to Test Series 1 and 2 of class 1 (see UN Manual of Tests and Criteria, part 1).".

#### **HAZARD**

6 At the beginning of the first paragraph, the words "Oxidizer, supports combustion." are added.

7 In the existing first sentence, the words "these materials" are replaced by the words "this cargo".

#### **STOWAGE & SEGREGATION**

8 In the first sentence, the word "should" is replaced by the word "shall".

#### **LOADING**

9 In the first sentence, the references "4 and 5" are replaced by the references "4, 5 and 6".

#### ***During loading, the following provisions shall be complied with:***

10 The first bullet related to smoking is deleted.

#### **PRECAUTIONS**

11 In the first paragraph, the existing third sentence is replaced by the following text:

"The master and officers are to note that the ship's fixed gas fire-extinguishing installation will be ineffective on the fire involving this cargo and that applying copious amounts of water may be necessary."

12 In the first paragraph, the last sentence is deleted.

#### **CARRIAGE**

13 A new second sentence is added, as follows:

"The temperature of this cargo shall be monitored and recorded daily during the voyage to detect decomposition, which may result in heating and oxygen depletion."

#### **DISCHARGE**

14 The second sentence is replaced by the following text:

"Bunkering of fuel oil shall not be allowed. Pumping of fuel oil in spaces adjacent to the cargo spaces for this cargo, other than the engine-room, shall not be allowed."

#### **EMERGENCY PROCEDURES**

15 In the provisions regarding Fire in cargo space containing this material, the word "installation" is inserted after the words "Ship's fixed gas fire-extinguishing".

16 In the provisions regarding Fire in cargo space containing this material, the words "Use copious quantities of water" are replaced by the words "Use copious amounts of water and isolate the source of heat, if any".

## **AMMONIUM NITRATE BASED FERTILIZER UN 2067**

### **DESCRIPTION**

17 In subparagraph .2, after the word "dolomite", the words "and/or mineral calcium sulphate" are inserted.

### **NOTES:**

18 In note 3, the word "explosive" is deleted.

### **STOWAGE & SEGREGATION**

19 In the fourth sentence, the words "any tank or double bottom" are replaced by the words "any tank, double bottom or pipe".

### **LOADING**

20 In the first sentence, the references "4 and 5" are replaced by the references "4, 5 and 6".

### **PRECAUTIONS**

21 After the first sentence, the following sentence is added:

"The master and officers are to note that the ship's fixed gas fire-extinguishing installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

### **CARRIAGE**

22 In the second sentence, the words "resulting in spontaneous" are replaced by the words "which may result in".

### **DISCHARGE**

23 The first sentence is replaced by the following text:

"Bunkering of fuel oil shall not be allowed. Pumping of fuel oil in spaces adjacent to the cargo spaces for this cargo, other than the engine-room, shall not be allowed."

24 After the second new sentence, the following text is added:

"Ammonium nitrate based fertilizers are hygroscopic and may cake in overhangs, impairing safety during discharge."

### **EMERGENCY PROCEDURES**

25 In the provisions regarding Fire in cargo space containing this material, the words "Ship's fixed fire-fighting installation" are replaced by the words "Ship's fixed gas fire-extinguishing installation".

26 In the provisions regarding Fire in cargo space containing this material, in the third sentence, after the word "water", the words "and isolate the source of heat, if any" are inserted.

## **AMMONIUM NITRATE BASED FERTILIZER UN 2071**

### **DESCRIPTION**

27 In the second paragraph, a footnote associated with "(see UN Manual of Tests and Criteria, part III, subsection 38.2)" is inserted, as follows:

" See also section 5 of Appendix 2 to this Code."

### **HAZARD**

28 In the first paragraph, the word "mixtures" is replaced by the word "cargoes" in the first sentence, and in the last sentence the words "mixtures is subject to the" are replaced by the words "cargoes are subject to an".

### **STOWAGE & SEGREGATION**

29 In the last sentence, after the word "standard,", the words "this cargo shall be stowed" are inserted.

### **LOADING**

30 In the first paragraph, first sentence, the references "4 and 5" are replaced by the references "4, 5 and 6".

***During loading, the following provisions shall be complied with:***

31 A new bullet is added, as follows:

- As far as reasonably practicable, combustible securing and protecting materials shall not be used. When wooden dunnage is necessary, only a minimum amount shall be used."

### **PRECAUTIONS**

32 After the first sentence, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

### **DISCHARGE**

33 The first sentence is replaced by the following text:

"Bunkering of fuel oil shall not be allowed. Pumping of fuel oil in spaces adjacent to the cargo spaces for this cargo, other than the engine-room, shall not be allowed."

34 After the second new sentence, the following sentence is added:

"Ammonium nitrate based fertilizers are hygroscopic and may cake in overhangs, impairing safety during discharge."

## **EMERGENCY PROCEDURES**

35 In the provisions regarding Fire in cargo space containing this material, the words "Ship's fixed fire-fighting installation" are replaced by the words "Ship's fixed gas fire-extinguishing installation".

## **AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)**

### **DESCRIPTION**

36 In subparagraph .2, after the word "dolomite", the words "and/or mineral calcium sulphate" are inserted.

37 In subparagraph .4, a footnote associated with "(see UN Manual of Tests and Criteria, part III, subsection 38.2)" is inserted, as follows:

"\* See also section 5 of Appendix 2 to this Code."

### **HAZARD**

38 The entire text under this heading is replaced by the following text:

"This cargo is non combustible or has a low fire-risk. Even though this cargo is classified as non-hazardous, some of the properties of the ammonium nitrate based fertilizer classified in class 9 under UN 2071 are exhibited when heated strongly. When this cargo is heated strongly, it will decompose and give off toxic gases with the risk of toxic fumes in the cargo space, adjacent spaces and on deck. Monitoring of the cargo temperature may give an early indication of decomposition. Fertilizer dust might be irritating to skin and mucous membranes. It is hygroscopic cargo and will cake if wet."

### **STOWAGE & SEGREGATION**

39 In the third sentence, the words "any tank or double bottom" are replaced by the words "any tank, double bottom or pipe".

40 In the fourth sentence, after the words "this type", the word "should" is replaced by the word "shall".

41 In the fifth sentence, the word "barrier" is replaced by the word "arrangement".

42 In the last paragraph, the last sentence is replaced by the following text:

"This requirement need not apply if the bulkhead is class A-60 or to short international voyages."

### **LOADING**

43 In the first paragraph, first sentence, the references "4 and 5" are replaced by the references "4, 5 and 6".

#### **PRECAUTIONS**

- 44 After the first sentence, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

#### **CARRIAGE**

- 45 The second sentence is deleted.

#### **DISCHARGE**

- 46 The first sentence is replaced by the following text:

"Bunkering of fuel oil shall not be allowed. Pumping of fuel oil in spaces adjacent to the cargo spaces for this cargo, other than the engine-room, shall not be allowed. Ammonium nitrate based fertilizers are hygroscopic and may cake in overhangs, impairing safety during discharge."

#### **EMERGENCY PROCEDURES**

- 47 In the provisions regarding Fire in cargo space containing this material, the words "Ship's fixed fire-fighting installation" are replaced by the words "Ship's fixed gas fire-extinguishing installation".

- 48 In the provisions regarding Fire in cargo space containing this material, in the third sentence, after the word "water", the words "and isolate the source of heat, if any" are inserted.

#### **AMMONIUM SULPHATE**

##### **HAZARD**

- 49 At the end of the paragraph, the following text is added:

"This cargo is hygroscopic and will cake if wet."

##### **LOADING**

- 50 In the last sentence, the references " 4 and 5" are replaced by the references "4, 5 and 6".

##### **DISCHARGE**

- 51 At the beginning of the paragraph, the following text is added:

"Ammonium sulphate is hygroscopic and may cake in overhangs, impairing safety during discharge."



## **BARIUM NITRATE, UN 1446**

### **PRECAUTIONS**

52 At the end of the paragraph, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

## **BORAX (PENTAHYDRATE CRUDE)**

### **DISCHARGE**

53 At the beginning of the paragraph, the following text is added:

"Borax (pentahydrate crude) is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **BORAX, ANHYDROUS (crude or refined)**

### **LOADING**

54 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

55 At the beginning of the paragraph, the following text is added:

"Borax anhydrous (crude or refined) is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **BROWN COAL BRIQUETTES**

### **HAZARD**

56 The text is replaced by the following text:

"This cargo is easily ignited, is liable to heat spontaneously, may ignite spontaneously and may deplete oxygen in the cargo space."

### **APPENDIX**

57 In paragraph 1.1, in the section for Precautions, the words "and opening cargo space enclosures" are deleted.

## **CALCIUM NITRATE, UN 1454**

### **PRECAUTIONS**

58 At the end of the paragraph, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

### **DISCHARGE**

59 At the beginning of the paragraph, the following text is added:

"Calcium nitrate is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **CALCIUM NITRATE FERTILIZER**

### **LOADING**

60 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **CLAY**

### **CLEAN-UP**

61 The text is replaced by "After discharge of this cargo, particular attention shall be given to the bilge wells of the cargo spaces".

## **DIAMMONIUM PHOSPHATE (D.A.P.)**

### **LOADING**

62 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

63 At the beginning of the paragraph, the following text is added:

"Diammonium phosphate is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **DISTILLERS DRIED GRAINS WITH SOLUBLES**

64 After existing schedule on DIRECT REDUCED IRON (C), the new schedule on DISTILLERS DRIED GRAINS WITH SOLUBLES is added, as follows:

## "DISTILLERS DRIED GRAINS WITH SOLUBLES

### DESCRIPTION

A dried blend of coarse grains and condensed distillers solubles that remain after the fermentation of the starch fraction of corn with yeasts and enzymes to produce ethanol and carbon dioxide. Yellowish brown in colour with a cooked corn odour. Moisture content not more than 13% and oil content not more than 11%. This schedule is not applicable to wet distillers grain (WDG) and distillers dried grain (DDG), which are not transported in bulk.

### CHARACTERISTICS

ANGLE OF REPOSE	BULK DENSITY (kg/m <sup>3</sup> )	STOWAGE FACTOR (m <sup>3</sup> /t)
Not applicable	450 to 520	1.92 to 2.22
SIZE	CLASS	GROUP
Not applicable	Not applicable	C

### HAZARD

No special hazards.

This cargo is non-combustible or has a low fire-risk.

### STOWAGE & SEGREGATION

No special requirements.

### HOLD CLEANLINESS

Clean and dry as relevant to the hazards of the cargo.

### WEATHER PRECAUTIONS

This cargo shall be kept as dry as practicable. This cargo shall not be handled during precipitation. During handling of this cargo all non-working hatches of the cargo spaces into which this cargo is loaded shall be closed.

### LOADING

Load in open unconfined areas. Trim in accordance with the relevant provision required under sections 4 and 5 of the Code.

### PRECAUTIONS

No special requirements.

### VENTILATION

No special requirements.

### CARRIAGE

Hatches of the cargo spaces carrying this cargo shall be weathertight to prevent the ingress of water.

### DISCHARGE

If this cargo has hardened, it shall be trimmed to avoid the formation of overhanging faces, as necessary.

### CLEAN-UP

No special requirements."

## **FERROPHOSPHORUS (including briquettes)**

### **CARRIAGE**

65 The text is replaced by the following text:

"For quantitative measurement of flammable and toxic gases such as Phosphine, which may be evolved from this cargo in accordance with the cargo information, suitable detectors for each gas or combination of gases shall be on board while this cargo is carried. The detectors shall be of certified safe type for use in explosive atmosphere. The concentrations of these gases in the cargo spaces carrying this cargo shall be measured regularly, during the voyage, and the results of the measurements shall be recorded and kept on board."

## **FERROSILICON UN 1408**

### **APPENDIX – DETAILED REQUIREMENTS**

66 In the first sentence, the words "competent Authority" are replaced by the word "Administration", in all cases.

## **FERROSILICON with 25% to 30% silicon, or 90% or more silicon**

### **LOADING**

67 The second sentence is replaced by the following text:

"As the density of the cargo is extremely high, the tanktop may be overstressed unless the cargo is evenly spread across the tanktop for homogenous weight distribution. Due consideration shall be paid to ensure that the tanktop is not overstressed during voyage and during loading by a pile of the cargo. Refer to the appendix to this schedule."

### **APPENDIX – DETAILED REQUIREMENTS**

68 In the first and second sentences, the words "competent Authority" are replaced by the word "Administration".

## **FERROUS SULPHATE HEPTAHYDRATE**

69 After existing schedule on FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS UN 2793, a new schedule on FERROUS SULPHATE HEPTAHYDRATE is added, as follows:

## "FERROUS SULPHATE HEPTAHYDRATE

### DESCRIPTION

Pale green crystals. Highly soluble in water. Product commonly referred to as "Copperas".

### CHARACTERISTICS

ANGLE OF REPOSE	BULK DENSITY (kg/m <sup>3</sup> )	STOWAGE FACTOR (m <sup>3</sup> /t)
Not applicable	750 to 1250	0.8 to 1.3
SIZE	CLASS	GROUP
Crystals	Not applicable	C

### HAZARD

Harmful if swallowed. Causes serious eye irritation. Causes skin irritation.

This cargo is non-combustible or has a low fire-risk.

Tends to caking when damp.

This cargo is highly soluble and will be acidic when wet.

Excessive levels spilt into water systems may result in oxygen depletion from the water.

### STOWAGE & SEGREGATION

"Separated from" Oxidizing substances.

### HOLD CLEANLINESS

Clean and dry as relevant to the hazards of the cargo.

### WEATHER PRECAUTIONS

This cargo shall be kept as dry as practicable. It shall not be handled during precipitation. During handling of this cargo all non-working hatches of the cargo spaces into which this cargo is loaded shall be closed.

### LOADING

Trim in accordance with the relevant provision required under sections 4 and 5 of the Code.

### PRECAUTIONS

Avoid contact with eyes and skin. Persons who may be in contact with the product shall wear protective clothing, gloves and eye protection. Typically, this is a non-dusty product, however, in particularly dry conditions, if dust is generated a filter mask shall also be worn. Bilge wells shall be clean, dry and covered, as appropriate, to prevent ingress of the cargo.

### VENTILATION

The cargo spaces carrying this cargo shall not be ventilated during voyage.

### CARRIAGE

Hatches of the cargo spaces shall be weathertight to prevent water ingress.

### DISCHARGE

If this cargo has hardened, it shall be trimmed to avoid the formation of overhangs, as necessary.

### CLEAN-UP

After discharge of this cargo, the cargo spaces and the bilge wells shall be swept clean and then thoroughly washed out."

## **FERTILIZERS WITHOUT NITRATES (non-hazardous)**

### **DISCHARGE**

70 At the beginning of the paragraph, the following text is added:

"Fertilizers without nitrates are hygroscopic and may cake in overhangs, impairing safety during discharge."

### **FLY ASH**

71 In the title of the schedule of FLY ASH, the word ", DRY" is added.

### **FLY ASH, WET**

72 After existing schedule on FLY ASH, a new schedule on FLY ASH, WET is added, as follows:

#### **"FLY ASH, WET**

##### **DESCRIPTION**

Greyish powder. This cargo is a mixture of the light, finely divided dusty fine powder residue from coal and oil fired power stations and water (not less than 10% of water). Ammonia odour.

##### **CHARACTERISTICS**

<b>ANGLE OF REPOSE</b>	<b>BULK DENSITY (kg/m<sup>3</sup>)</b>	<b>STOWAGE FACTOR (m<sup>3</sup>/t)</b>
Not applicable	900 to 1300	0.77 – 1.11
<b>SIZE</b>	<b>CLASS</b>	<b>GROUP</b>
Under 1 mm	Not applicable	A

##### **HAZARD**

Wet fly ash is liable to flow if it has sufficiently high moisture content.  
It is non-combustible or has a low fire-risk.

##### **STOWAGE & SEGREGATION**

"Separated from" foodstuffs.

##### **HOLD CLEANLINESS**

No special requirements.

##### **WEATHER PRECAUTIONS**

When a cargo is carried in a ship other than specially constructed or fitted cargo ship complying with the requirements in subsection 7.3.2 of this Code, the following provisions shall be complied with:

- .1 The moisture content of the cargo shall be kept less than its TML during voyage.

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- .2 Unless expressly provided otherwise in this individual schedule, the cargo shall not be handled during precipitation.
- .3 Unless expressly provided otherwise in this individual schedule, during handling of the cargo, all non-working hatches of the cargo spaces into which the cargo is loaded or to be loaded shall be closed.
- .4 The cargo may be handled during precipitation provided that the actual moisture content of the cargo is sufficiently less than its TML so that the actual moisture content is not liable to be increased beyond the TML by the precipitation.
- .5 The cargo in a cargo space may be discharged during precipitation provided that the total amount of the cargo in the cargo space is to be discharged in the port.

#### **LOADING**

Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code.

#### **PRECAUTIONS**

Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

#### **VENTILATION**

The cargo spaces carrying this cargo shall not be ventilated during voyage.

#### **CARRIAGE**

The appearance of the surface of this cargo shall be checked regularly during voyage. If free water above the cargo or fluid state of the cargo is observed during voyage, the master shall take appropriate actions to prevent cargo shifting and potential capsize of the ship, and give consideration to seeking emergency entry into a place of refuge.

#### **DISCHARGE**

No special requirements.

#### **CLEAN-UP**

After discharge of this cargo, the bilge wells and the scuppers of the cargo spaces shall be checked and any blockage in the bilge wells and the scuppers shall be removed."

### **GRANULAR FERROUS SULPHATE**

73 After the new schedule on FLY ASH, WET, a new schedule on GRANULAR FERROUS SULPHATE is added, as follows:

#### **"GRANULAR FERROUS SULPHATE**

##### **DESCRIPTION**

Grey to brown granules. Absorbs moisture and is highly soluble in water.

**CHARACTERISTICS**

ANGLE OF REPOSE	BULK DENSITY (kg/m <sup>3</sup> )	STOWAGE FACTOR (m <sup>3</sup> /t)
30° to 45°	1100 to 1600	0.63 to 0.9
SIZE	CLASS	GROUP
Up to 15 mm	Not applicable	C

**HAZARD**

Harmful if swallowed. Causes serious eye irritation. Causes skin irritation.  
This cargo is non-combustible or has a low fire-risk.  
Tends to caking when damp.  
It is highly soluble and will be acidic when wet.  
Excessive levels spilt into water systems may result in oxygen depletion from the water.

**STOWAGE & SEGREGATION**

"Separated from" oxidizing substances.

**HOLD CLEANLINESS**

Clean and dry as relevant to the hazards of the cargo.

**WEATHER PRECAUTIONS**

This cargo shall be kept as dry as practicable. It shall not be handled during precipitation.  
During handling of this cargo all non-working hatches of the cargo spaces into which this cargo is loaded shall be closed.

**LOADING**

Trim in accordance with the relevant provision required under sections 4, 5 and 6 of the Code.

**PRECAUTIONS**

Avoid contact with eyes and skin. Persons who may be in contact with the product shall wear protective clothing, gloves and eye protection. Minimize dust generation when loading. If dust is generated a filter mask shall also be worn.  
Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

**VENTILATION**

The cargo spaces carrying this cargo shall not be ventilated during voyage.

**CARRIAGE**

Hatches of the cargo spaces shall be weathertight to prevent water ingress.

**DISCHARGE**

If this cargo has hardened, it shall be trimmed to avoid the formation of overhangs, as necessary.

**CLEAN-UP**

After discharge of this cargo, the cargo spaces and the bilge wells shall be swept clean and then thoroughly washed out."



## **GYPSUM**

### **WEATHER PRECAUTIONS**

74 In the second and third sentences, the words "handled" and "handling" are replaced by the words "loaded" and "loading", respectively.

## **LEAD NITRATE, UN 1469**

### **PRECAUTIONS**

75 At the end of the paragraph, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

## **MAGNESIUM NITRATE, UN 1474**

### **PRECAUTIONS**

76 The sentence is replaced by the following text:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

### **DISCHARGE**

77 At the beginning of the paragraph, the following text is added:

"Magnesium nitrate is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **MAGNESIUM SULPHATE FERTILIZERS**

78 After existing schedule on MAGNESIUM NITRATE, UN 1474, a new schedule on MAGNESIUM SULPHATE FERTILIZERS is added, as follows:

### **"MAGNESIUM SULPHATE FERTILIZERS**

#### **DESCRIPTION**

Powdered fertilizers or fertilizer components containing magnesium sulphate.  
Grey to brown powder. Partially soluble in water and may be dusty.

**CHARACTERISTICS**

ANGLE OF REPOSE	BULK DENSITY (kg/m <sup>3</sup> )	STOWAGE FACTOR (m <sup>3</sup> /t)
30° to 35°	850 to 1150	0.87 to 1.18
SIZE	CLASS	GROUP
Powder	Not applicable	C

**HAZARD**

May be harmful if swallowed. May cause skin or eye irritation.  
This cargo is non-combustible or has a low fire-risk.  
It is partially soluble.  
Dusty but may cake if wetted.

**STOWAGE & SEGREGATION**

No special requirements.

**HOLD CLEANLINESS**

Clean and dry as relevant to the hazards of the cargo.

**WEATHER PRECAUTIONS**

This cargo shall be kept as dry as practicable. It shall not be handled during precipitation.  
During handling of this cargo all non-working hatches of the cargo spaces into which this cargo is loaded shall be closed.

**LOADING**

Trim in accordance with the relevant provision required under sections 4, 5 and 6 of the Code.

**PRECAUTIONS**

Avoid contact with eyes and skin. Minimize dust generation when loading. Persons who may be exposed to the dust of the cargo shall wear goggles or other equivalent dust eye protection and dust filter mask. Those persons shall wear protective clothing, as necessary. Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

**VENTILATION**

The cargo spaces carrying this cargo shall not be ventilated during voyage.

**CARRIAGE**

Hatches of the cargo spaces shall be weathertight to prevent water ingress.

**DISCHARGE**

If this cargo has hardened, it shall be trimmed to avoid the formation of overhangs, as necessary.

**CLEAN-UP**

After discharge of this cargo, the cargo spaces and the bilge wells shall be swept clean and then thoroughly washed out."

**METAL SULPHIDE CONCENTRATES**

**LOADING**

79 The text ", in particular on smaller ships, i.e. 100 m long or less." is deleted.

## **MINERAL CONCENTRATES**

### **BULK CARGO SHIPPING NAMES**

80 The sentence "All known Bulk Cargo Shipping Names (BCSN) of mineral concentrates are listed above but the list is not exhaustive" after the list of Bulk Cargo Shipping Names is deleted.

### **LOADING**

81 The text ", in particular on smaller ships, i.e. 100 m long or less." is deleted.

## **MONOAMMONIUM PHOSPHATE (M.A.P.)**

### **LOADING**

82 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

83 At the beginning of the paragraph, the following text is added:

"Monoammonium phosphate is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **PHOSPHATE ROCK (calcined)**

### **DISCHARGE**

84 At the beginning of the paragraph, the following text is added:

"Phosphate rock (calcined) is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **POTASH**

### **LOADING**

85 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

86 At the beginning of the paragraph, the following text is added:

"Potash is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **POTASSIUM CHLORIDE**

### **LOADING**

87 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

88 At the beginning of the paragraph, the following text is added:

"Potassium chloride is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **POTASSIUM NITRATE UN 1486**

### **LOADING**

89 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **PRECAUTIONS**

90 At the end of the paragraph, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

### **DISCHARGE**

91 At the beginning of the paragraph, the following text is added:

"Potassium nitrate is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **POTASSIUM SULPHATE**

### **LOADING**

92 The references "4 and 5" are replaced by the references "4, 5 and 6".

## **PYRITES, CALCINED (Calcined Pyrites)**

### **PRECAUTIONS**

93 In the third sentence, the words "lime before loading" are replaced by the words "protective coating such as lime-wash before loading to avoid any potential corrosive reaction between the cargo, water and steel."

## **RASORITE (ANHYDROUS)**

### **DISCHARGE**

94 At the beginning of the paragraph, the following sentence is added:

"Rasorite (anhydrous) is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **SALT**

### **WEATHER PRECAUTIONS**

95 In the second and third sentences, the words "handled" and "handling" are replaced by the words "loaded" and "loading", respectively.

## **SEED CAKE, containing vegetable oil UN 1386 (b)**

### **DESCRIPTION**

96 In the last paragraph, after the first sentence, the following text is added:

"The provisions of this schedule should also not apply to mechanically expelled citrus pulp pellets containing not more than 2.5% oil and 14% oil and moisture combined."

### **PRECAUTIONS**

97 In the fifth sentence the words "it becomes apparent that fire is not liable to take place in the cargo space, to avoid the possibility of ignition of solvent vapours" are replaced by the words "fire is apparent".

### **REMARKS**

98 The first sentence is deleted.

## **SEED CAKE UN 2217**

### **PRECAUTIONS**

99 In the existing fourth sentence, the words "it becomes apparent that fire is not liable to take place in the cargo space, to avoid the possibility of ignition of solvent vapours" are replaced by the words "fire is apparent".

### **REMARKS**

100 The first sentence is deleted.

**SEED CAKE (non-hazardous)**

**DESCRIPTION**

101 At the end of the first paragraph, the following sentence is added:

"The provisions of this schedule also apply to mechanically expelled citrus pulp pellets containing not more than 2.5% oil and 14% oil and moisture combined."

**SODIUM NITRATE, UN 1498**

**PRECAUTIONS**

102 At the end of the paragraph, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

**DISCHARGE**

103 At the beginning of the paragraph, the following text is added:

"Sodium nitrate is hygroscopic and may cake in overhangs, impairing safety during discharge."

**SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE UN 1499**

**LOADING**

104 The references "4 and 5" are replaced by the references "4, 5 and 6".

**PRECAUTIONS**

105 At the end of the paragraph, the following text is added:

"The master and officers are to note that the ship's fixed gas fire-fighting installation will be ineffective on fires involving this cargo and that applying copious amounts of water may be necessary."

**DISCHARGE**

106 At the beginning of the paragraph, the following text is added:

"Sodium nitrate and potassium nitrate mixture is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **SULPHUR (formed, solid)**

### **PRECAUTIONS**

107 The third sentence "Holds including trimming plates and tanktops shall be treated with effective, commercially available protective coating or lime-washed to avoid any potential corrosive reaction between sulphur, water and steel" is replaced by the sentence "Holds including trimming plates and tanktops shall be treated with protective coating such as lime-wash to avoid any potential corrosive reaction between sulphur, water and steel."

## **SUPERPHOSPHATE**

### **LOADING**

108 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

109 At the beginning of the paragraph, the following text is added:

"Superphosphate is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **TAPIOCA**

### **LOADING**

110 The references "4 and 5" are replaced by the references "4, 5 and 6".

## **UREA**

### **LOADING**

111 The references "4 and 5" are replaced by the references "4, 5 and 6".

### **DISCHARGE**

112 At the beginning of the paragraph, the following text is added:

"Urea is hygroscopic and may cake in overhangs, impairing safety during discharge."

## **WOOD PELLETS**

### **LOADING**

113 The references "4 and 5" are replaced by the references "4, 5 and 6".

## WOOD PRODUCTS – GENERAL

114 After existing schedule on WOOD PELLETS, a new schedule on Wood products – General is added, as follows:

### "Wood products – General

(See Bulk Cargo Shipping Names below)

**LOGS** **PULP WOOD**  
**TIMBER** **ROUNDWOOD**  
**SAW LOGS**

### DESCRIPTION

This schedule only applies to wood products transported in bulk, i.e. loaded and discharged by such means as elevator or grab and which are not specifically referred to in a separate schedule.

### CHARACTERISTICS

ANGLE OF REPOSE	BULK DENSITY (kg/m <sup>3</sup> )	STOWAGE FACTOR (m <sup>3</sup> /t)
Not applicable	250 to 500	2 to 4
SIZE	CLASS	GROUP
-	MHB	B

### HAZARD

These cargoes are liable to cause oxygen depletion and increase of carbon dioxide in the cargo space and adjacent spaces.

These cargoes are non-combustible or have a low fire-risk.

### STOWAGE & SEGREGATION

No special requirements.

### HOLD CLEANLINESS

No special requirements.

### WEATHER PRECAUTIONS

No special requirements.

### LOADING

Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code.

### PRECAUTIONS

Entry of personnel into cargo and adjacent confined spaces shall not be permitted until tests have been carried out and it has been established that the oxygen level is 21%. If this condition is not met, additional ventilation shall be applied to the cargo hold or adjacent enclosed spaces and remeasuring shall be conducted after a suitable interval.

An oxygen meter shall be worn and activated by all crew when entering cargo and adjacent enclosed spaces.

### VENTILATION

Ventilation of enclosed spaces adjacent to a cargo hold before entry may be necessary even if these spaces are apparently sealed from the cargo hold.



**CARRIAGE**

No special requirements.

**DISCHARGE**

No special requirements.

**CLEAN-UP**

No special requirements.

**EMERGENCY PROCEDURES**

**SPECIAL EMERGENCY EQUIPMENT TO BE CARRIED**

Self-contained breathing apparatus and an oxygen meter should be available.

**EMERGENCY PROCEDURES**

Nil

**EMERGENCY ACTION IN THE EVENT OF FIRE**

Batten down; use ship's fixed fire-fighting installation if fitted. Exclusion of air may be sufficient to control fire.

**MEDICAL FIRST AID**

Refer to Medical First Aid Guide (MFAG), as amended.

**WOOD PULP PELLETS**

- 115 The existing schedule on WOOD PULP PELLETS is deleted in its entirety.

**APPENDIX 3**

***Properties of solid bulk cargoes***

- 116 In subsection 1.1, the following bulk cargo shipping names are deleted:

CASTOR BEANS  
SODIUM NITRATE

- 117 In subsection 1.1, the following bulk cargo shipping names are added:

GRANULAR FERROUS SULPHATE  
MAGNESIUM SULPHATE FERTILIZERS  
TAPIOCA  
WOOD PELLETS

#### APPENDIX 4

##### *Index*

118 The BCSN "FLY ASH" is replaced by "FLY ASH, DRY".

119 The following rows are added in the table:

MATERIAL	GROUP	REFERENCES
DISTILLERS DRIED GRAINS WITH SOLUBLES	C	
FERROUS SULPHATE HEPTAHYDRATE	C	
FLY ASH, WET	A	
GRANULAR FERROUS SULPHATE	C	
LOGS	B	see Wood Products – General schedule
MAGNESIUM SULPHATE FERTILIZERS	C	
PULP WOOD	B	see Wood Products – General schedule
ROUNDWOOD	B	see Wood Products – General schedule
SAW LOGS	B	see Wood Products – General schedule
TIMBER	B	see Wood Products – General schedule
Wood Products – General	B	

120 The words "WOOD PULP PELLETS" and "Pellets, wood pulp" are deleted.

RESOLUTION MSC.318(89)  
(adopted on 20 May 2011)  
ADOPTION OF AMENDMENTS TO THE INTERNATIONAL MARITIME  
SOLID BULK CARGOES (IMSBC) CODE