

EDITORIAL AND TECHNICAL GROUP OF  
THE SUB COMMITTEE ON CARRIAGE OF  
CARGOES AND CONTAINERS  
25th session  
Agenda item 3.2

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ENGLISH ONLY

## **PREPARATION OF DRAFT AMENDMENT 04-17 TO THE IMSBC CODE**

### **New proposals of amendments to the Code, new individual schedules or amendments to existing ones**

#### **Amendments to the existing schedules for SEED CAKE and insertion of new entries for vegetable materials and their processing by-products**

**Submitted by China**

#### **SUMMARY**

<i>Executive summary:</i>	This document proposes amendments to the existing schedules for SEED CAKE and insertion of new entries for "vegetable materials and their processing by-products" in the IMSBC Code
<i>Strategic direction:</i>	5.2
<i>High-level action:</i>	5.2.3
<i>Output:</i>	5.2.3.3
<i>Action to be taken:</i>	Paragraph 9
<i>Related documents:</i>	None

### **Introduction**

1 According to the IMSBC Code, the following four entries can be used for the transport of seed cakes:

- .1 SEED CAKE, containing vegetable oil UN 1386  
(a) mechanically expelled seeds, containing more than 10% of oil or more than 20% of oil and moisture combined;
- .2 SEED CAKE, containing vegetable oil UN 1386  
(b) solvent extractions and expelled seeds, containing not more than 10% of oil and when the amount of moisture is higher than 10%, not more than 20% of oil and moisture combined;

- .3 SEED CAKE UN 2217  
with not more than 1.5% oil and not more than 11% moisture; and
- .4 SEED CAKE  
(non-hazardous).

## Discussions

2 In accordance with the entries mentioned above, seed cakes are those that meet the relevant criteria as follows:

- .1 SEED CAKE (UN 1386(a)): Residues remaining after oil has been expelled mechanically from oil-bearing seeds;
- .2 SEED CAKE (UN 1386(b)): Residues remaining after oil has been extracted by a solvent process or expelled mechanically from oil-bearing seeds;
- .3 SEED CAKE (UN 2217): Residues remaining after oil has been extracted by a solvent process from oil-bearing seeds; and
- .4 SEED CAKE (non-hazardous): the provisions of this schedule apply to solvent extracted rape seed meal, pellets, soya bean meal, cotton seed meal and sunflower seed meal, containing not more than 4% oil and 15% oil and moisture combined and being substantially free from flammable solvents.

3 From the key words underlined in paragraph 2, it is evident that seed cakes are residues remaining after oil has been expelled mechanically or solvent extracted. This is also indicated in column 17 of entries UN 1386 (a), UN 1386 (b) and UN 2217 in the IMDG Code. Comparing the cargoes listed in column 17 of these entries with those under schedules of SEED CAKE in the IMSBC Code, inconsistencies were identified as set out in annex 1.

4 Nevertheless, by analysing the cargoes under existing schedules of SEED CAKE (UN 1386 ((a) and (b)), UN 2217), it was identified that many cargoes are not expelled or extracted. These cargoes per se are not seeds and, therefore, cannot be classified as seed cakes. They are actually vegetable materials or their processing by-products.

5 Since 1 January 2011, when the IMSBC Code entered into force, China Maritime Safety Administration has received numerous inquiries relating to the transport of vegetable materials or their processing by-products from shippers, cargo owners or their agents. Some of the cargoes are not included in the existing schedules, and some are not residues remaining after oil has been expelled mechanically or solvent extracted although their names have been included in the existing schedules. Furthermore, the majority of these cargoes are not seeds.

6 As the existing schedules can only be used for the transport of SEED CAKE, those cargoes that are not expelled mechanically or solvent extracted or do not meet the definition of seed shall not be transported under the existing schedules.

7 From 1 January 2011, Dalian Dangerous Goods Transportation Research Center recognized by China Maritime Safety Administration assessed many similar cargoes, the majority of which cannot be classified as seed cakes (extracts of the assessment report are attached in annex 4). In fact, these are vegetable materials or their processing by-products. In order to facilitate the transport of these cargoes, it is necessary to add new schedules for vegetable materials and their processing by-products in the IMSBC Code.

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**Proposals**

- 8 Based on the above discussion, it is proposed by China that:
- .1 all those cargoes that are not listed in column 18 of the DGL from the SEED CAKE schedules of the IMSBC Code (UN 1386 and UN 2217) be deleted;
  - .2 for vegetable materials and their processing by-products, which have been tested according to N.4 of the UN Manual of Tests and Criteria and found to be meeting the criteria for Class 4.2, a schedule of "VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS (UN 3088)" be added. The schedule is set out in annex 2;
  - .3 for vegetable materials and their processing by-products, which have been tested according to N.4 of the UN Manual of Tests and Criteria and found to be not meeting the criteria for Class 4.2, but meeting the criteria in 9.2.3.3 of this Code, a schedule of "VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS (MHB)" be added, as set out in annex 3; and
  - .4 for vegetable materials and their processing by-products, which have been tested according to N.4 of the UN Manual of Tests and Criteria and found to be not meeting the criteria for Class 4.2 and criteria in 9.2.3.3 of this Code, a schedule of "VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS (C)" be added, as set out in annex 4.

**Action requested of the group**

- 9 The group is invited to consider the proposals in paragraph 8 and take action as appropriate.

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**ANNEX 1**

**INCONSISTENCIES BETWEEN THE IMDG CODE AND THE IMSBC CODE ON  
THE LIST OF SEED CAKE**

<b>IMDG</b>	<b>IMSBC (1386)</b>	<b>IMSBC (2217)</b>
coconut (copra)	<del>bakery materials</del>	<del>bakery materials</del>
cotton seed	<del>barley malt pellets</del>	<del>barley malt pellets</del>
groundnut (peanut)	<del>beet</del>	<del>beet</del>
linseed	<del>bran pellets</del>	<del>bran pellets</del>
maize (hominy chop)	<del>brewer's grain pellets</del>	<del>brewer's grain pellets</del>
niger seed	<del>citrus pulp pellets</del>	<del>citrus pulp pellets</del>
palm kernel	<del>coconut</del>	<del>coconut</del>
rape seed	copra	copra
rice bran	<del>corn gluten</del>	<del>corn gluten</del>
soya bean	cotton seed	cotton seed
sunflower seed	<del>expellers</del>	<del>expellers</del>
	<del>gluten pellets</del>	<del>gluten pellets</del>
	<del>ground nuts, meal</del>	<del>ground nuts, meal</del>
	<del>hominy chop</del>	<del>hominy chop</del>
	linseed	linseed
	maize	maize
	<del>meal, oily</del>	<del>meal, oily</del>
	<del>mill feed pellets</del>	<del>mill feed pellets</del>
	niger seed, expellers	niger seed, expellers
	<del>oil cake</del>	<del>oil cake</del>
	palm kernel	palm kernel
	peanuts	peanuts
	<del>pellets, cereal</del>	<del>pellets, cereal</del>
	<del>pollard pellets</del>	<del>pollard pellets</del>
	rape seed	rape seed
	<del>rice broken</del>	<del>rice broken</del>
	rice bran	rice bran
	<del>safflower seed</del>	<del>safflower seed</del>
	<del>seed expellers, oily</del>	<del>seed expellers, oily</del>
	soya bean	soya bean
	<del>strussa pellets</del>	<del>strussa pellets</del>

IMDG	IMSBC (1386)	IMSBC (2217)
	sunflower seed	sunflower seed
	toasted meals	

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## ANNEX 2

### VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS, UN 3088

#### Description

The schedule used for vegetable materials and their processing by-product which consisted of two parts:

1 Vegetable materials or their processing by-products which meet the criteria of moisture and oil concentrate for UN 1386 and UN 2217. These cargoes are listed as below:

**Niger seed, expellers**  
**Peanuts**  
**Copra**  
**Corn gluten**  
**Cotton seed**  
**Gluten pellets**  
**Soya bean**  
**Linseed**  
**Maize**

**Palm kernel**  
**Coconut**  
**Rape seed**  
**Rice broken**  
**Rice bran**  
**Ground nuts, meal**  
**Hominy chop**  
**Sunflower seed**

2 Vegetable materials or their processing by-products which tested to meet the criteria of class 4.2.

#### Characteristics

Angle of repose	Bulk density (kg/m <sup>3</sup> )	Stowage factor (m <sup>3</sup> /t)
Not applicable	Various	Various
Size	Class	Group
Not applicable	4.2	B

#### Hazard

May self-heat slowly and, if wet or containing an excessive proportion of unoxidized oil, ignite spontaneously. Liable to oxidize, causing subsequent reduction of oxygen in the cargo space. Carbon dioxide may be produced.

#### Stowage & segregation

No special requirements other than prescribed in section 9.3 of this Code.

If the bulkhead between the cargo space and the engine-room is not insulated to class A-60 standard, the cargo shall be stowed "away from" the bulkhead.

#### 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 or to be loaded shall be closed.

#### Loading

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

### **Precautions**

The temperature of this cargo shall be measured regularly at a number of depths in the cargo spaces and recorded during the voyage. If the temperature of the cargo reaches 55°C and continues to increase, ventilation to the cargo shall be stopped. If self-heating continues, then carbon dioxide or inert gas shall be introduced to the cargo space. Entry of personnel into cargo spaces for this cargo shall not be permitted until tests have been carried out and it has been established that the oxygen content has been restored to a normal level. When the planned interval between the commencement of loading and the completion of discharge of this cargo exceeds 5 days, the cargo shall not be accepted for loading unless the cargo is to be carried in a cargo space equipped with facilities for introducing carbon dioxide or inert gas into the space. Smoking and the use of naked lights shall be prohibited in the vicinity of the cargo space during loading and unloading and on entry into the cargo spaces at any other time. Electrical circuits for equipment in cargo spaces which is unsuitable for use in an explosive atmosphere shall be isolated by removal of links in the system other than fuses. Spark-arresting screens shall be fitted to ventilators to the cargo spaces containing of this cargo.

### **Ventilation**

To prevent self-heating of the cargo, surface ventilation either natural or mechanical should be conducted, as necessary, but caution is required when using mechanical ventilation.

### **Carriage**

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

### **Discharge**

No special requirements.

### **Clean-up**

No special requirements.

### **Emergency procedures**

<b><u>Special emergency equipment to be carried</u></b> Self-contained breathing apparatus.
<b><u>Emergency procedures</u></b> Wear self-contained breathing apparatus.
<b><u>Emergency action in the event of fire</u></b> Batten down. Use ship's fixed fire-fighting installation, if fitted.
<b><u>Medical first aid</u></b> Refer to the Medical First Aid Guide (MFAG), as amended.

### **Remarks**

The use of CO<sub>2</sub> is limited to controlling the fire and further amounts may need to be injected from time to time during the sea passage to reduce the oxygen content in the hold. On arrival in port, the cargo will need to be dug out to reach the seat of the fire.

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### ANNEX 3

#### VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS (SELF-HEATING)

##### Description

The schedule used for vegetable materials and their processing by-products which tested not to meet the criteria for Class 4.2, but meet the criteria in 9.2.3.3 of this Code.

A certificate from a person recognized by the competent authority of the country of shipment shall be provided by the shipper, prior to loading, stating that the test results are not meet the criteria of class 4.2.

##### Characteristics

Angle of repose	Bulk density (kg/m <sup>3</sup> )	Stowage factor (m <sup>3</sup> /t)
Not applicable	Various	Various
Size	Class	Group
Not applicable	MHB (SH)	B

##### Hazard

May self-heat slowly and, if wet or containing an excessive proportion of un-oxidized oil, ignite spontaneously. Liable to oxidize, causing subsequent reduction of oxygen in the cargo space. Carbon dioxide may also be produced.

##### Stowage & segregation

Segregation as for Class 4.2 materials.

If the bulkhead between the cargo space and the engine-room is not insulated to class A-60 standard, the cargo shall be stowed "away from" the bulkhead.

##### 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 or to be loaded shall be closed.

##### Loading

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

##### Precautions

The temperature of this cargo shall be measured regularly at a number of depths in the cargo spaces and recorded during the voyage. If the temperature of the cargo reaches 55°C and continues to increase, ventilation to the cargo shall be stopped. If self-heating continues, then carbon dioxide or inert gas shall be introduced to the cargo space. Entry of personnel into cargo spaces for this cargo shall not be permitted until tests have been carried out and it has been established that the oxygen content has been restored to a normal level. When the planned interval between the commencement of loading and the completion of discharge of this cargo exceeds 5 days, the cargo shall not be accepted for loading unless the cargo is to be carried in a cargo space equipped with facilities for introducing carbon dioxide or inert gas into the space. Smoking and the use of naked lights shall be prohibited in the vicinity of the cargo space during loading and unloading and on entry into the cargo spaces at any other time. Electrical circuits for equipment in cargo spaces which is unsuitable for use in an explosive atmosphere shall be isolated by removal of links in the system other than fuses.

Spark-arresting screens shall be fitted to ventilators to the cargo spaces containing this cargo.

#### **Ventilation**

To prevent self-heating of the cargo, surface ventilation either natural or mechanical should be conducted, as necessary, but caution is required when using mechanical ventilation.

#### **Carriage**

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

#### **Discharge**

No special requirements.

#### **Clean-up**

No special requirements.

#### **Emergency procedures**

<b><u>Special emergency equipment to be carried</u></b> Self-contained breathing apparatus.
<b><u>Emergency procedures</u></b> Wear self-contained breathing apparatus. <b><u>Emergency action in the event of fire</u></b> Batten down. Use ship's fixed fire-fighting installation, if fitted. <b><u>Medical first aid</u></b> Refer to the Medical First Aid Guide (MFAG), as amended.

#### **Remarks**

The use of CO<sub>2</sub> is limited to controlling the fire and further amounts may need to be injected from time to time during the sea passage to reduce the oxygen content in the hold. On arrival in port, the cargo will need to be dug out to reach the seat of the fire.

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## ANNEX 4

### VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS (NON-HAZARDOUS)

#### Description

The schedule used for vegetable materials and their processing by-products which tested not to meet the criteria for Class 4.2 and criteria in 9.2.3.3 of this Code.

A certificate from a person recognized by the competent authority of the country of shipment shall be provided by the shipper, prior to loading, stating that the test results do not meet the criteria of class 4.2 and criteria in 9.2.3.3 of this Code.

#### Characteristics

Angle of repose	Bulk density (kg/m <sup>3</sup> )	Stowage factor (m <sup>3</sup> /t)
Not applicable	Various	Various
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 or to be loaded shall be closed.

#### Loading

Trim in accordance with the relevant provisions 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

No special requirements.

#### Clean-up

No special requirements.