

SUB-COMMITTEE ON CARRIAGE OF
CARGOES AND CONTAINERS
3rd session
Agenda item 6

CCC 3/5
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AMENDMENTS TO THE IMSBC CODE AND SUPPLEMENTS

Report of the twenty-fifth session of the Editorial and Technical Group

Note by the Secretariat

SUMMARY

<i>Executive summary:</i>	This document contains the report of the Editorial and Technical Group at its twenty-fifth session
<i>Strategic direction:</i>	5.2
<i>High-level action:</i>	5.2.3
<i>Output:</i>	5.2.3.4
<i>Action to be taken:</i>	Paragraph 4
<i>Related documents:</i>	CCC 2/15 and IMSBC Code (MSC.268(85))

1 GENERAL

Introduction

1.1 The twenty-fifth session of the Editorial and Technical Group of the Sub-Committee on Carriage of Cargoes and Containers was held from 22 to 26 February 2016 under the chairmanship of Dr. Ismael Cobos Delgado (Spain).

1.2 The session was attended by delegations from the following Member States:

ANGOLA	NETHERLANDS
AUSTRALIA	NEW ZEALAND
BELGIUM	NIGERIA
CANADA	NORWAY
CHILE	PERU
CHINA	PHILIPPINES
FINLAND	SIERRA LEONE
FRANCE	SOUTH AFRICA
GEORGIA	SPAIN
GERMANY	SWEDEN
INDONESIA	SYRIAN ARAB REPUBLIC

IRAN (ISLAMIC REPUBLIC OF)
ITALY
JAPAN
MARSHALL ISLANDS

TURKEY
UNITED KINGDOM
UNITED STATES

and observers from the following international organizations and non-governmental organizations in consultative status:

BIMCO
EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)
INTERNATIONAL GROUP OF PROTECTION AND INDEMNITY ASSOCIATIONS (P & I CLUBS)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS (INTERCARGO)
INTERNATIONAL BULK TERMINALS ASSOCIATION (IBTA)
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
INTERNATIONAL IRON METALLICS ASSOCIATION LTD. (IIMA)

Instructions to the E&T Group

1.3 The Sub-Committee instructed E&T 25 to prepare the draft amendment (04-17) to the IMSBC Code, based on the documents submitted to CCC 2 and related documents submitted to E&T 25, and taking into account comments made and decisions taken by the Sub-Committee, to submit a written report to CCC 3. The Group was also instructed to consider new proposals, if submitted, and advise CCC 3 accordingly.

Adoption of the agenda

1.4 The Group adopted the agenda (E&T 25/1) for this session, the contents of which had been agreed to by CCC 2.

2 MEASURES TO IMPROVE SAFE TRANSPORT OF SOLID BULK CARGOES

Provisions and identification of hazard for materials hazardous only in bulk (MHB)

Metal sulphide concentrates

2.1 The Group considered document CCC 2/5/15 (Belgium), proposing to amend the existing schedule for METAL SULPHIDE CONCENTRATES in order to ensure that the listed hazards are consistent with all potentially relevant hazards for Group B cargoes.

2.2 Additionally, the Group considered document E&T 25/INF.4 (Belgium), providing supplementary supporting documentation to the above proposal, such as guidance on classification of copper concentrates, lead concentrates, zinc concentrates and nickel concentrates, all in relation to MHB cargoes.

2.3 The Group discussed in detail matters related to the heterogeneous nature in the essential properties of the different concentrates under consideration, not only in terms of human health effects and toxic properties, but also in relation to the hazards specified in the existing schedule, i.e. self-heating and corrosivity. In this context, the Group agreed to amend the schedule to include hazards related to toxic solids and maintaining the schedule generic profile.

2.4 The corresponding draft amendments to the existing schedule for METAL SULPHIDE CONCENTRATES, as agreed by the Group, are set out in annex 1.

MHB Specification

2.5 The Group considered document CCC 2/5/26 (Germany), proposing the evaluation of those cargo schedules in the IMSBC Code that do not specify the basis for MHB classification. The Group recalled that this proposal is based on the recent adoption (amendment 03-15) of a notational listing system/criteria for identifying MHB cargoes (section 9.2.3 of the Code).

2.6 Considering that CCC 2 agreed that it would be premature to amend the existing MHB classification in the identified individual schedules without more detailed technical information, and taking into account that due to the nature of this work, this proposal could not be included in amendment 04-17. The Group, based on the identified need for a detailed assessment and testing before any notational listing could be assigned, recommended interested delegations (including the industry) and, in particular, those who submitted the proposals that resulted in the inclusion of the affected individual schedules in the Code, to provide the necessary supporting documentation in order to justify the notational listing assignment.

Classification of Alumina Hydrate as MHB

2.7 The Group considered document CCC 2/5/28 (IBTA), recommending that the MHB classification of ALUMINA HYDRATE be removed and its listing as a Group A and B cargo be amended to Group A cargo. The Group noted that, based on a recent independent research carried out, IBTA states that this cargo does not fall within the criteria specified in the IMSBC Code (section 9) for classification as a material hazardous only in bulk (MHB) nor for classification in the IMDG Code (Part 2) as dangerous goods.

2.8 In this context, the Group also considered document CCC 2/INF.23 (IBTA), containing the test results regarding the skin and eye irritation and skin sensitization characteristics for ALUMINA HYDRATE (aluminium hydroxide), which were obtained in accordance with relevant guidelines for the testing of chemicals.

2.9 After some discussions, the Group recalled that the Sub-Committee invited interested delegations to submit relevant information; however, no document has been submitted at this session on this matter. Therefore, due to the lack of relevant information, the Group agreed to further invite interested delegations to submit documents to CCC 3.

Provisions for substances harmful to the marine environment (HME)

2.10 The Group noted that no document has been submitted on the provisions for substances harmful to the marine environment at this session. The Group also noted that CCC 2 invited MEPC 69 (April 2016) to consider the draft amendments to MARPOL Annex V related to HME substances and that the outcome of the MEPC 69 on this matter will be considered at CCC 3.

Provisions for solid bulk cargoes that may liquefy

Rheolat 2 project

2.11 The Group considered documents CCC 2/5/19 and E&T 25/2 (France), presenting the progress reports on the Rheolat 2 project to optimize a VTPB (Vibration Table with Penetration Bit) transportability test for New Caledonian nickel ores, and stating that the project will be completed in one year's time.

2.12 In this context, the Group noted the intention of France to propose the dissemination of the project's outcome (final developed test) through a CCC circular, which would be submitted to CCC 3 for its consideration. The Group concurred that, before the implementation of the Rheolat test, which may have an impact on sections 4.1.4 and 8 of the IMSBC Code, it would be important to take into account remarks (if any) from the experts.

2.13 In this connection, the Group noted the statement from the delegation of Australia requesting that the outcome of the project should be released as soon as possible, with a view to addressing the ongoing issues related to ships carrying nickel ores from New Caledonia and other locations.

Bauxite and Coal

2.14 The Group noted that CCC 2 had established a Correspondence Group on Evaluation of Properties of BAUXITE and COAL and that the report will be submitted to CCC 3.

3 PREPARATION OF DRAFT AMENDMENT 04-17 TO THE IMSBC CODE

Incorporation of proposals agreed in principle by CCC 2

FERROSILICON 25% to 30% silicon, or 90% or more silicon

3.1 The Group considered document CCC 2/5/1, proposing amendments to the bulk cargo shipping name (BCSN) in the individual schedule for FERROSILICON and correcting the size of the briquettes in the characteristics table. The Group noted that this proposal is related to the percentages of silicon contents as indicated in both schedules for FERROSILICON UN 1408 and FERROSILICON, which seems to be overlapped and might result in the wrong assignment of a cargo to the appropriate individual schedule.

3.2 The corresponding draft amendments to the existing schedule for FERROSILICON 25% to 30% silicon, or 90% or more silicon, as agreed by the Group, are set out in annex 1.

Bulk cargo shipping name in relation to dangerous goods transported in solid bulk form

3.3 The Group considered document CCC 2/5/8 (Australia), proposing amending the requirements related to the appropriate Bulk Cargo Shipping Name (BCSN) to be used when dangerous goods are transported in solid bulk form. The Group noted that the proposal intends to set a requirement in section 4 of the Code, specifying that the Proper Shipping Name (PSN), as per the IMDG Code, shall be used as the BCSN, provided that is not a generic entry or not otherwise specified (N.O.S).

3.4 After discussions, and based on the instructions and the agreement by CCC 2, the Group agreed to the draft amendments regarding the BCSN (paragraph 4.1.1 of the Code) and the corresponding consequential amendments to the definition of BCSN (section 1), as set out in annex 1.

Metal sulphide concentrates, corrosive UN 1759

3.5 The Group considered document CCC 2/5/9 (Australia), proposing a new individual schedule for CORROSIVE SOLID N.O.S. UN 1759 Metal Sulphide Concentrates as Group A and B cargo.

3.6 The Group discussed the table for "Characteristics", in particular, the "Class" box, and whether the information on both, the class as per sub-section 9.2.2 of the Code and the notational listing corresponding to MHB, should be included when the material may possess chemical hazards when carried in bulk, in addition to hazards corresponding to materials classified as dangerous goods in the IMDG Code.

3.7 After a lengthy discussion, the Group agreed that whenever a material meets the hazards to be classified as a dangerous good in accordance with the IMDG Code, the "Class" box should only be used for that purpose, and that any additional MHB hazards should be stated in an asterisked note underneath the table for "Characteristics", as reflected in the draft individual schedule prepared by the Group.

3.8 A number of delegations supported a proposal to amend the heading of the "Class" box to read "Hazard classification" in line with paragraph 9.2 of the IMSBC Code. In this context, the Group considered that any approach deviating from the agreed explained procedure (see paragraphs 3.6 and 3.7), needs careful consideration and be proposed by means of submissions to CCC.

3.9 Therefore, taking into account the recommendations of the Group regarding the Bulk Cargo Shipping Name (BCSN) to be used when dangerous goods are transported in solid bulk form (see paragraphs 3.4 and 3.5), the Group agreed that the BCSN of this cargo should be "METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759".

3.10 The draft individual schedule for METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759, as agreed by the Group, is set out in annex 1.

Silicon slag

3.11 The Group considered documents CCC 2/5/11 and CCC 2/INF.9 (Australia), proposing amendments to the existing individual schedule for SILICON SLAG and providing the supporting documentation.

3.12 Following the discussion, the Group, in line with the views expressed at CCC 2, decided that, instead of preparing a new draft individual schedule for this cargo, it would be more appropriate to add the name "Silicon Dross" as a synonym to the existing BCSN in appendix 4 of the Code, and to further amend the bulk density and stowage factor values in the table for "Characteristics", as well as the consequential amendment in the section for "Loading" as a result of the high bulk density of the cargo.

3.13 The draft amendments to the existing individual schedule for SILICON SLAG, as agreed by the Group, are set out in annex 1.

Clinker Ash

3.14 The Group considered documents CCC 2/5/25 and CCC 2/INF.22 (Germany), proposing amendments to the existing individual schedule for CLINKER ASH and noted the supporting documentation, together with document E&T 25/3/3 (Germany), providing further amendments to those proposed in document CCC 2/5/25.

3.15 Following discussions, the Group agreed to include the synonym "Bottom Ash" in appendix 4 of the Code, and to amend the text of the third sentence under the section for "Description".

3.16 The corresponding draft amendments to the existing individual schedule for CLINKER ASH, as agreed by the Group, are set out in annex 1.

Ammonium Nitrate Based Fertilizer (non-hazardous)

3.17 The Group recalled that the Sub-Committee had agreed, in principle, to document CCC 2/5/24 (Germany), proposing to classify AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) as a Group B cargo, and had referred it to the Group for further consideration.

3.18 The Group also considered document E&T 25/3/6 (CEFIC), explaining that non-classified (UN) ammonium nitrate based fertilizers in themselves are non-hazardous products. CEFIC suggested that it could be handled in a safe way without extra precautions and without endangering human health or the environment. Furthermore, the possibility of introducing amendments to make the existing schedule match the perceived hazards of the material was discussed. The Group noted that the industry's view is, that a reclassification of AMMONIUM NITRATE BASED FERTILIZERS (non-hazardous) to MHB (OH) cargo Group B is not justified, considering the available information.

3.19 The delegations of the Marshall Islands (Ship's flag State) and Germany (coastal State) informed the Group that an investigation report of the incident of the cargo ship **Purple Beach** was not published yet. With this report, and with the additional experience gained from other casualties in the past, amendments could be prepared.

3.20 Although several delegations supported the document CCC 2/5/24 (Germany), a number of delegations expressed the view that, there was insufficient information in order to agree to change the classification of the cargo from "Group C" to "Group B" and to establish the notational listing MHB (OH), as proposed. Based on the above reasons, the Group could not support suggestions as contained in the document by CEFIC to amend the schedule for this cargo.

3.21 Having noted the merit for further consideration of the possible amendment to the individual schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous), the Group agreed to invite interested delegations to submit related documents to CCC 3, providing further justification and more information in order to facilitate the decision making process.

Glass cullet

3.22 The Group considered documents CCC 2/5/2 and CCC 2/INF.2 (Sweden), proposing a new individual schedule for flat glass cullet in bulk and providing the supporting documentation.

3.23 The Group assessed the similarity between the proposed individual schedule for flat glass cullet and the existing individual schedule for "GLASS CULLET", and concurred that the best solution would be to combine the information provided documents CCC 2/5/2 and CCC 2/INF.2 (Sweden) with the existing individual schedule for "GLASS CULLET". In this context, the Group agreed to introduce a new paragraph in the section for "Description" and to adjust the figures in the table for "Characteristics" under the "Size", "Bulk density" and "Stowage factor" boxes.

3.24 The Group further noted that, due to the properties of these materials, the section for "Hazards" may need further consideration, in particular, regarding the issue of irritation, as these materials do not possess any chemical hazards. Therefore, the Group agreed to invite interested delegations to submit further relevant information to CCC 3.

3.25 The draft amendment to the individual schedule for "GLASS CULLET", as agreed by the Group, is set out in annex 1.

Monocalciumphosphate (MCP)

3.26 The Group considered documents CCC 2/5/3 and CCC 2/INF.3 (Sweden), proposing a new individual schedule for Monocalciumphosphate (MCP) as a Group A cargo and noted the supporting documentation provided. The Group also considered document E&T 25/3/10 (CEFIC), informing that four different samples of MCP have been analysed dropping a moisture content result of less than 3-4%. Documentation of the four test reports is provided and CEFIC proposes that the MCP should not be classified as a Group A cargo. However, due to the fact that MCP can be corrosive to eyes, it should be classified as a Group B (MHB) cargo.

3.27 Following the discussion, the Group was of the opinion that, based on the information available, this material should be classified as Group A and B and recognized that the chemical hazard that led to classify this cargo as MHB was its corrosive properties. The Group also noted that additional information was needed in order to finalize the section for "Emergency procedures".

3.28 The draft individual schedule for MONOCALCIUMPHOSPHATE (MCP), as agreed by the Group, is set out in annex 1.

Synthetic silicon dioxide

3.29 The Group considered documents CCC 2/5/4 and CCC 2/INF.4 (Sweden), proposing a new individual schedule for synthetic silicon dioxide and providing the supporting documentation.

3.30 The Group concurred that, at this stage and based on the available information, this cargo was a non-cohesive material and agreed to include the corresponding angle of repose in the draft individual schedule.

3.31 The draft individual schedule for SYNTHETIC SILICON DIOXIDE, as agreed by the Group, is set out in annex 1.

Synthetic calcium fluoride

3.32 The Group considered documents CCC 2/5/5 and CCC 2/INF.5 (Sweden), proposing a new individual schedule for synthetic calcium fluoride. The Group also noted the available supporting documentation and, after introducing some minor modifications, agreed to the proposal.

3.33 The draft individual schedule for SYNTHETIC CALCIUM FLUORIDE, as agreed by the Group, is set out in annex 1.

Sand, mineral concentrate, radioactive material, low specific activity (LSA-I) UN 2912

3.34 The Group considered documents CCC 2/5/10 and CCC 2/INF.8 (Australia), proposing a new individual schedule for radioactive material, low specific activity (LSA-I) non-fissile or fissile-excepted UN 2912, Sand, Mineral Concentrate and providing the supporting documentation.

3.35 The Group further noted that Australian shippers have required an authorization (according to section 1.3 of the IMSBC Code) from the Australian competent Authority in order to perform shipments (loading) from their ports. Australia stated that based on the practice, it has been noted that by combining the provisions of the existing schedules for RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) non-fissile or fissile-excepted UN 2912 and SAND, HEAVY MINERAL, a suitable and alternative solution for those operations can be provided.

3.36 During the Group's deliberations it was noted that, in addition to the hazards corresponding to class 7, this cargo also met the MHB criteria for toxic (TX) and corrosive solids (TR) and that the prolonged and repeated exposure to the cargo may result in long term human health effects. Therefore, the Group agreed to include the relevant provisions in the corresponding sections of the draft individual schedule.

3.37 Following the agreed amendment to paragraph 4.1.1 of the Code (see paragraph 3.4) with regard to bulk cargo shipping name (BCSN) related to dangerous goods transported in solid bulk form, the Group agreed to modify the BCSN for this material as SAND, MINERAL CONCENTRATE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) UN 2912.

3.38 Regarding the information to be included in the table for "Characteristics", under the "Class" box, see paragraphs 3.6, 3.7 and 3.8.

3.39 The draft individual schedule for SAND, MINERAL CONCENTRATE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) UN 2912, as agreed by the Group, is set out in annex 1.

Silicomanganese (carbo-thermic)

3.40 The Group considered documents CCC 2/5/12 and CCC 2/INF.10 (Australia), proposing a new individual schedule for synthetic silicon fluoride in bulk and providing the supporting documentation. The Group also considered document CCC 2/5/30 (South Africa), proposing a new individual schedule for Silicomanganese (SiMn) in bulk Group C cargo.

3.41 The Group agreed to include the words "(carbo-thermic)" in the BCSN of the proposed schedule, because the production process of this material is closely related to its final composition.

3.42 The draft individual schedule for SILICOMANGANESE (carbo-thermic), as agreed by the Group, is set out in annex 1.

Titanomagnetite Sand

3.43 The Group considered documents CCC 2/5/14 and CCC 2/INF.12 (New Zealand), proposing a new individual schedule for Titanomagnetite sand in bulk and providing the supporting documentation.

3.44 The Group introduced some amendments to the proposed individual schedule in order to avoid narrowing its scope of application to the loading procedures currently applied to the transport of this cargo in ships complying with the requirements of subsection 7.3.2 of the Code only. On the other hand, the Group introduced amendments to the section for "Loading" regarding the terms "shearing faces" (see paragraph 3.80).

3.45 The draft individual schedule for TITANOMAGNETITE SAND, as agreed by the Group, is set out in annex 1.

Monoammonium Phosphate (M.A.P.) – Mineral Enriched

3.46 The Group considered documents CCC 2/5/18 and CCC 2/INF.13 (Australia), proposing a new individual schedule for Monoammonium Phosphate (M.A.P.) – Mineral Enriched and providing the supporting documentation, together with document E&T 25/3/8 (CEFIC), commenting and emphasizing that the proposed new individual schedule should carefully specify the composition of the material in order to avoid additives in the production process of this material, which could have a hazardous impact.

3.47 The Group was of the opinion that document E&T 25/3/8 is fully focused on the production stage of the material and, therefore, the considerations included in the document do not compromise safety during sea transport.

3.48 Additionally, considering that the qualification of the BCSN "mineral enriched" was related to the material coating, the Group agreed to amend the BCSN accordingly.

3.49 The Group also noted that the provisions included in the existing schedule for MONOAMMONIUM PHOSPHATE (M.A.P) were very similar to those in the new proposed individual schedule, and agreed that the existing schedule may need future amendments to adequately reflect the Group of the cargo.

3.50 The draft individual schedule for MONOAMMONIUM PHOSPHATE (M.A.P.), MINERAL ENRICHED COATING, as agreed by the Group, is set out in annex 1.

Pig iron by-products

3.51 The Group considered documents CCC 2/5/27 and CCC 2/INF.22 (Germany), proposing a new individual schedule for pig iron by-products and providing the supporting documentation. In this context, the Group noted that Germany had given full consideration to the recommendations by E&T 22 where the proposal for this draft individual schedule was previously discussed.

3.52 Having considered the production process of this cargo, the Group agreed that it would be recommendable to amend the proposed BCSN as "Blast furnace iron by-products". In addition, the Group agreed to use some provisions contained in the existing individual schedule for METAL SCRAP in order to improve the proposed new schedule.

3.53 The draft individual schedule for BLAST FURNACE IRON BY-PRODUCTS, as agreed by the Group, is set out in annex 1.

Proposals forwarded by CCC 2, subject to submission of additional information

3.54 The Group recalled that CCC 2 agreed to refer document CCC 2/5/13 (Islamic Republic of Iran) to E&T 25 for further consideration, subject to the submission of additional technical information.

3.55 Having noted that there was no submission on this item, the Group agreed to invite interested delegations to provide further related information (if any) to CCC 3.

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

Seed cake

3.56 The Group considered document E&T 25/3 (Germany and Italy), providing a proposal to include a new individual schedule for oily vegetable materials and their processing by-products (non-hazardous).

3.57 The co-sponsors propose a new name for cargoes currently classified under "SEED CAKE". The new proposed schedule as "OILY VEGETABLE MATERIALS AND THEIR PROCESSING BY-PRODUCTS (non-hazardous)", would replace the existing schedule for SEED CAKE (non-hazardous). While the remaining entry of SEED CAKE could be dedicated to dangerous goods only.

3.58 Additionally, the Group considered document E&T 25/3/1 (Germany and Italy), containing a proposal to include a new individual schedule for oily vegetable materials and their processing by-products as an MHB in order to complement the proposal for a new entry of non-hazardous cargoes under the same Bulk Cargo Shipping Name.

3.59 The Group noted that this proposal is part of a broader proposal aiming to reform all the entries for packaged and bulk transport of oily vegetable materials and their processing by-products. The Group also noted that the overall proposal suggests that the bulk sea cargoes should be allowed to be transported as Group B, MHB or Group C cargoes according to their properties.

3.60 Moreover, the Group also considered document E&T 25/3/7 (China), proposing amending the existing schedules for SEED CAKE and inserting new entries for "vegetable materials and their processing by-products". China, in its document, proposed that:

- .1 all those cargoes which are not listed in column 17 of the DGL and which do not correspond to the SEED CAKE schedules in the IMSBC Code (UN 1386 and UN 2217) be deleted from the section for "Description";
- .2 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 meet the criteria for Class 4.2, be included in an individual schedule for "Vegetable materials and their processing by-products (UN 3088)";
- .3 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 not to meet the criteria for Class 4.2, but meeting the criteria in 9.2.3.3 of the Code, be included in an individual schedule for "Vegetable materials and their processing by-products (MHB)"; and
- .4 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 not to meet the criteria for Class 4.2 and criteria in 9.2.3.3 of this Code, be included in an individual schedule for "Vegetable materials and their processing by-products (C)".

3.61 The Group initially discussed the appropriateness of considering proposals related to the existing schedules for "SEED CAKES". In this context, the majority of the delegations expressed the opinion that before embarking on any amendment that could impact on this set of individual schedules, a very precautionary approach should be taken.

3.62 Furthermore, the Group was of the view that careful consideration should be given to possible undesired impact on to the Grain Code when addressing issues related to seed cakes.

3.63 In addition, the Group expressed its concern about the existing individual schedules of the Code that do not allow to accurately distinguish between seed cakes and oily vegetable materials and that, as a first step, those materials which do not fall within the seed cakes variety should be deleted from the schedules contained in the IMSBC Code.

3.64 During the discussion, different views were expressed within the Group. On one hand, views on the need to consider the shipping experience as a reliable source of knowledge to decide how best a cargo may be carried, and the need for explicit regulations on the moisture content of these kind of materials were expressed. On the contrary, other opinions were that the properties of the cargo and, consequently, the provisions for carriage should be determined by carrying out appropriate tests.

3.65 The Group agreed in general that there is a need for a road map to define the path that would lead to amend the set of schedules related to seed cakes.

3.66 On the other hand, it was emphasized that there is a lack of alignment between the scope of properties covered by the UN 1386 in the UN Orange Book and both, the IMDG and IMSBC Codes, with respect to the described oil and moisture content. It was also noted that the lack of alignment leads to an inconsistency that would need to be addressed by UNSCETDG. This course of action may, consequently, exclude some materials from coverage by the "dangerous goods" bulk schedules.

3.67 However, in noting this, the Group also concurred that such material cannot necessarily be considered as Group C as they do present a potential hazard. In that context, the Group recognized that the experience has shown that some materials other than class 4.2, have presented significant self-heating risk when shipped in bulk. This issue would need to be captured in an MHB schedule.

3.68 The Group also noted that the individual schedule for GRAIN SCREENING PELLETS covers materials described in the SEED CAKE entries but as Group C instead of Group B and this should be captured in this process to minimize duplication.

3.69 Subsequently, the Group concluded that the naming and scope of these schedules needed to be modified in order to create an obvious link. This would involve broadening the scope of the existing Group C schedule to include processes such as crushing and steaming. The five resultant schedules would then be:

- SEED CAKE UN 1386(a)
- SEED CAKE UN 1386(b)
- SEED CAKE UN 2217
- SEED CAKE AND PROCESSED OILY VEGETABLES, which would be an MHB schedule
- SEED CAKE AND PROCESSED OILY VEGETABLES (Non Hazardous)

3.70 This approach would prevent any increase of the number of schedules in the Code and would broaden the scope to cover all relevant materials. In addition, progression between entries would be obvious based on the proposed BCSN. This process would provide a useful road map to address in the future the different concerns that have repeatedly been raised.

3.71 The Group also noted that the column 17 of the DGL in the IMDG Code is just indicative and that nothing prevents anybody from applying the individual schedules for seed cakes to materials other than those included in the schedules themselves, as long as their oil and moisture contents meet the established criteria.

3.72 Additionally, the Group noted that the delegations of Australia, Canada, China, Germany, Italy, Spain and the United States may jointly developed a document with the output being:

- .1 to note the need to harmonize the "DG" IMSBC schedules and the IMDG Code entries with the UN Model Regulations, but recognize that harmonization between the IMDG Code entries and the UN Model Regulations is the first step, so changes to the IMSBC Code with regard to these schedules are contingent on this work;
- .2 to note the potential need for a Class 4.2 – UN 3088 SEED CAKE (processed oily vegetables) entry in the IMSBC Code and this should be considered where these products do not match the corresponding provisions of the seed cakes schedules; and
- .3 to recommend changes to the IMSBC Code after review of the existing schedules for SEED CAKE (non-hazardous) and GRAIN SCREENING PELLETS to replace these schedules with a Group B (MHB) and Group C schedule under the BCSN of SEED CAKE AND PROCESSED OILY VEGITABLES; and SEED CAKE AND PROCESSED OILY VEGITABLES (non-hazardous).

3.73 Finally, the Group recognized the inconsistencies brought up by Italy (DSC 18/6/23) regarding appendix 4 of the IMSBC Code and agreed that the resolution of such inconsistencies was the only amendment that could be achieved at this stage.

Ilmenite sand

3.74 The Group considered document E&T 25/3/2 (Germany) containing a proposal to amend the existing schedule for ILMENITE SAND. It was suggested that the ILMENITE SAND was the only entry with a misleading category of one Group "A or C", which came from a former regulation, as the Code was not yet mandatory. Therefore, it seems to be a relic from the non-mandatory BC code, which should be corrected. The amended schedule was set out in annex to the document.

3.75 Having agreed to the amendment introduced in the existing schedule for ILMENITE SAND (see paragraph 3.74), the Group noted the intervention by the delegation of INTERCARGO raising the possibility of merging the individual schedules for ILMENITE SAND and ILMENITE CLAY due to their similarity. However, the Group considered that, because of the differences in the mineralogy and bulk density of these materials, it would be necessary to submit a formal proposal to the Sub-Committee, in order to introduce such amendments.

3.76 The draft amendments to existing schedule for ILMENITE SAND, as agreed by the Group, are set out in annex 1.

Wood pellets containing additives and/or binders

3.77 The Group considered document E&T 25/3/4 (Germany), proposing amending the existing schedule for WOOD PELLETS CONTAINING ADDITIVES AND/OR BINDERS. In particular, it is suggested that the terms "compressing 3.5 times" in the fifth sentence of the description should be amended.

3.78 After having introduced some minor adjustments in the original proposal, the Group agreed that the same amendments should apply to the individual schedule for "WOOD PELLETS NOT CONTAINING ANY ADDITIVES AND/OR BINDERS" and proceeded accordingly.

3.79 The draft amendments to existing schedules for WOOD PELLETS CONTAINING ADDITIVES AND/OR BINDERS and "WOOD PELLETS NOT CONTAINING ANY ADDITIVES AND/OR BINDERS" as agreed by the Group, are set out in annex 1.

Copper slag, metal sulphide concentrates, mineral concentrates and zinc slag

3.80 The Group considered document E&T 25/3/5 (Germany), proposing amending the existing individual schedules for COPPER SLAG, METAL SULPHIDE CONCENTRATES, Mineral Concentrates and ZINC SLAG. In particular, it was suggested that the terms "shearing faces" were not a recognized technical concept, therefore, its meaning was unclear and could lead to a misinterpretation of the loading requirement.

3.81 The Group concurred with the substance of the proposal and, after having adjusted the text, agreed to include the draft amendments to the existing schedules for COPPER SLAG, METAL SULPHIDE CONCENTRATES, Mineral Concentrates and ZINC SLAG, as well as to the draft individual schedule for TITANOMAGNETITE SAND, as set out in annex 1

Direct reduced iron (by-product fines)

3.82 The Group considered the document CCC 2/5/17 (IIMA), presenting the joint efforts of the International Iron Metallics Association, the Bolivarian Republic of Venezuela and others (i.e. a taskforce of industry participants and experts) to improve the draft individual schedule for DIRECT REDUCED IRON (C) which had been proposed in documents E&T 21/5/8 and CCC 1/5/18, and providing an updated progress report.

3.83 The Group also considered document E&T 25/INF.2 (IIMA), providing a further progress report and seeking the advice of the Group on the mechanism for submission of the eventual schedule, particularly, on whether a new or a revised schedule was the most appropriate way to reflect the outcome of the work undertaken.

3.84 The Group advised that instead of a revision to the existing schedule for DIRECT REDUCED IRON (C) (By-product Fines), it would be more appropriate to prepare a completely new schedule for DIRECT REDUCED IRON (By-product Fines with moisture content above 0.3%).

Improve corrosivity test protocols for complex solid bulk cargoes

3.85 The Group considered document CCC 2/5/31 (IIMA), providing comments on document CCC 2/5/9 (Australia), in particular, raising a general concern with the prescribed test method for assessing corrosivity of metals for solid samples, and stating that applying that test to metal sulphide concentrates may result in the inappropriate classification of "corrosive solids MHB" or "corrosive to metals Class 8". It also stressed that mining companies have

reported very few corrosion problems from shipowners in decades of transporting these materials in bulk and packaged form, which questions the suitability of the test for solid cargoes.

3.86 The Group noted document E&T 25/INF.3 (IIMA) providing an update on research underway to improve corrosivity test protocols for complex solid bulk cargoes. The results of testing will be submitted to CCC 3 for consideration.

Harmonization of the Code

3.87 The Group considered document E&T 25/3/9 (Finland), submitted with the intention to harmonize the content of the IMSBC Code and proposing amending more than 20 different sets of existing individual schedules, as well as some of the provisions of the Code itself.

3.88 The Group decided that the most reasonable way to consider this bulky submission was paragraph by paragraph, each of which contained a maximum of two different proposals.

3.89 With regard to the editorial proposals contained in the document, the Group agreed on the following actions:

- .1 replacement of the wording "of the Code" with "of this Code" in a number of individual schedules, as appropriate;
- .2 adjustments and inclusion of standard text of non-cohesive cargoes related to trimming in the section for "Loading" in a number of individual schedules, as appropriate;
- .3 adjustments and inclusion of standard text for high density cargoes in a number of individual schedules, as appropriate;
- .4 adjustments and inclusion of standard text related to the moisture content of Group A cargoes in the section for "Hazard" in a number of individual schedules, as appropriate;
- .5 adjustments and inclusion of standard text related to the carriage provisions of Group A cargoes in the section for "Carriage" in a number of individual schedules, as appropriate;
- .6 inclusion of the "subsidiary risk" as a mandatory piece of information, when appropriate, in paragraph 1.4.2 of the Code;
- .7 adjustments and inclusion of standard text related to the precautions for Group A cargoes in the section for "Weather precautions" in a number of individual schedules, as appropriate;
- .8 inclusion of a reference to the resolution A.1050(27) on Revised recommendations for entering enclosed spaces aboard ships in the individual schedules that have explicit provisions related to entering enclosed spaces;
- .9 inclusion of the wording "low explosive limit" stood for by LEL individual schedules for DRIs, as appropriate;

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- .10 inclusion of the meaning of the word "company" in the individual schedules for BROWN COAL BRIQUETTES and COAL, as appropriate; and
 - .11 deletion of a reference to an individual schedule that does not exist (fishmeal, Group C) in the individual schedule for FISHMEAL (FISHCRAP), STABILIZED UN 2216 Anti-oxidant treated.

3.90 Regarding the substantial proposals contained in the document, the Group agreed on the following actions:

- .1 replacement of the word "should" with "shall" after careful consideration in those mandatory sections of a number of individual schedules, as appropriate; and
- .2 replacement of the word "shall" with "should" after careful consideration in the text under the BCSN of one individual schedule.

3.91 As the result of a lengthy debate, the Group considered that the issues found in a number of individual schedules, as stated below, needed detailed consideration before any amendment could be agreed on and invited interested delegations to submit proposals, as appropriate:

- .1 ALUMINIUM FERROSILICON POWDER UN 1395 and ALUMINIUM FERROSILICON POWDER, UNCOATED UN 1398: There is an inconsistency in both individual schedules between the gases produced by these cargoes as stated under the section for "Hazard", and the carriage requirements for atmosphere testing instruments under the section for "Carriage";
- .2 there are some Group A and B cargoes that use the standard text under the section for "Weather precautions" which involve the presence of water, subsequently, consideration is needed to work out whether or not the water is an agent that may impact on the hazards that trigger the Group B;
- .3 ALUMINIUM SMELTING/REMELTING BY-PRODUCTS, PROCESSED: Although the individual schedule includes a carriage requirement for acetylene detectors, generation of acetylene is not mentioned in the section for "Hazards";
- .4 IRON OXIDE, SPENT or IRON SPONGE, SPENT UN 1376: The gases that this cargo may produce, as stated under the section for "Hazards", do not imply any atmosphere testing instrument requirement under the section for "Carriage";
- .5 SULPHUR UN 1350: A possible inconsistency in the provisions under the section for "Hazards" related to the nature of the material (Class 4.1); and
- .6 PETROLEUM COKE: A possible inconsistency in the provisions under the section for "Hazards" related to the nature of the material (MHB).

3.92 It is relevant to note that, any word "should" that remain in the mandatory sections in the individual schedules included in the Code (until the amendment 04-17) has been assessed and deliberately left by the Group.

3.93 The mandatory sections in the individual schedules dealing with specific properties of Group A cargoes have been harmonized by the Group (until the amendment 04-17). Therefore, any non-standard text remaining in those sections has deliberately been left by the Group.

3.94 Finally, the Group discussed how to refer to the different provisions of the Code (i.e. section, sub-section, paragraph), in order to harmonize the current wording used and decided that this matter needed to be considered as a long-term amendment to be agreed at the Sub-Committee level, as it could have relevant implications. As an example, it was emphasized that the term "Section" is used not only to refer to provisions of the Code, but also to the different parts included in the individual schedules.

3.95 The draft amendments, as agreed by the Group, are set out in annex 1.

Properties of solid bulk cargoes, index and Bulk Cargo Shipping Names in three languages (English, Spanish and French (Appendixes 3, 4 and 5 of the Code, respectively))

3.96 The Group identified the Bulk Cargo Shipping Names of the corresponding draft individual schedules, which should be included in Appendixes 3, 4 and 5 of the Code, as set out in annex 1.

Draft amendments to the IMSBC Code

3.97 Consequently, the Group prepared the draft amendments (04-17) to the IMSBC Code, as set out in annex 1.

Consequential amendments to MSC.1/Circ.1395/Rev.2

3.98 Additionally, the Group further noted that there are consequential amendments to MSC.1/Circ.1395/Rev.2 on the Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective, as follows:

- .1 in paragraph 2.2 of the annex, table 1, the bulk cargo shipping name "FERROSILICON, 25% to 30% silicon, or 90% or more silicon" is replaced with "FERROSILICON with at least 25% but less than 30% silicon, or 90% or more silicon"; and
- .2 in paragraph 2.3 of the annex, table 1, include in the corresponding order "METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759".

3.99 The draft MSC circular with the abovementioned amendments is set out in annex 2.

4 ACTION REQUESTED OF THE SUB-COMMITTEE

4.1 The Sub-Committee is invited to approve the report in general and, in particular, to:

- .1 note the deliberations of the Group regarding those individual schedules in the IMSBC Code which do not specify the basis for MHB classification and endorse the Group's recommendation that interested delegations and, in particular, those which submitted the proposals that resulted in the inclusion of the affected individual schedules in the Code, should provide the necessary supporting documentation in order to justify the notational listing assignment (paragraph 2.6);

- .2 note the discussions and deliberations of the Group with regard to the classification of Alumina Hydrate as MHB cargo and its invitation to interested delegations to submit documents to CCC 3 (paragraphs 2.7 to 2.9);
- .3 in regard to the Rheolat 2 project to optimize a VTPB (Vibration Table with Penetration Bit) transportability test for New Caledonian nickel ores, note the recommendation of the Group that before the implementation of the Rheolat test, which may have an impact on sections 4.1.4 and 8 of the IMSBC Code, it would be important to take into account remarks from the experts (paragraphs 2.11 to 2.13);
- .4 agree to the decision of the Group to amend the requirements (paragraph 4.1.1 of the Code) regarding the appropriate Bulk Cargo Shipping Name (BCSN) to be used when dangerous goods are transported in solid bulk form and the consequential amendments to the definition of BCSN in the Code (paragraphs 3.3 and 3.4);
- .5 endorse the Group's recommendation to manage the information related to the table for "Characteristics", in particular, the information to be included when the material may possess chemical hazards when carried in bulk (MHB) in addition to hazards corresponding to materials classified as dangerous goods in the IMDG Code (paragraphs 3.6 to 3.10);
- .6 note the discussions and deliberations of the Group on the proposed amendment to the individual schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous), and its invitation to interested delegations to submit related documents to CCC 3, with a view to providing further justification and more information (paragraphs 3.17 to 3.21);
- .7 endorse the Group's decision on amending the existing individual schedule for "GLASS CULLET" in order to incorporate the proposed individual schedule for flat glass cullet (paragraphs 3.22 to 3.25);
- .8 note that the additional information is needed in order to finalize the section for "Emergency procedures" in the draft individual schedule for MONOCALCIUMPHOSPHATE (MCP) (paragraph 3.27 and annex 1);
- .9 note the discussions and deliberations of the Group regarding potential amendments the existing schedules for SEED CAKE and endorse the Group's recommendations on the need of a road map to define the path that would lead to amend the set of schedules related to seed cakes (paragraphs 3.56 to 3.72);
- .10 endorse the actions taken by the Group to amend the appendix 4 of the Code in order to address the inconsistencies between the existing schedules for SEED CAKE and appendix 4 (paragraph 3.73);
- .11 endorse the actions of the Group regarding the editorial and substantial amendments and harmonization of existing individual schedules (paragraphs 3.87 to 3.93);
- .12 note Group's view on the possible wording harmonization in the Code, e.g. reference to "section" and "paragraph" (paragraph 3.94);

- .13 agree to the draft amendments (04-17) to the IMSBC Code (paragraph 3.97 and annex 1); and
- .14 agree to the consequential amendments to MSC.1/Circ.1395/Rev.2 on the Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective (paragraphs 3.98 and 3.99 and annex 2).

ANNEX 1

DRAFT AMENDMENTS (04-17) TO THE INTERNATIONAL MARITIME SOLID BULK CARGOES (IMSBC) CODE

Section 1 General provisions

1.4 Application and implementation of this Code

1 In paragraph 1.4.2, the words "Characteristics (other than CLASS and GROUP)" are replaced with the words "Characteristics (other than CLASS, SUBSIDIARY RISK and GROUP)".

1.7 Definitions

2 In the definition for "*Bulk Cargo Shipping Name (BCSN)*", the third sentence is replaced with the following:

"When a cargo is dangerous goods as defined in the IMDG Code, as defined in regulation VII/1.1 of the SOLAS Convention, refer to 4.1.1."

Section 4 Assessment of acceptability of consignments for safe shipment

4.1 Identification and classification

3 The existing paragraph "4.1.1" is replaced with the following:

"4.1.1 Bulk Cargo Shipping Name

4.1.1.1 Each solid bulk cargo in this Code has been assigned a Bulk Cargo Shipping Name (BCSN). When a solid bulk cargo is carried by sea it shall be identified in the transport documentation by the BCSN.

4.1.1.2 Except for RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non-fissile or fissile – excepted UN 2912 and RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I), non-fissile or fissile – excepted UN 2913, where the cargo is dangerous goods identified with a generic Proper Shipping Name and/or not otherwise specified (N.O.S) in the IMDG code, the BCSN shall consist of, in the following order:

- .1 a chemical or technical name of the material;
- .2 a specific description to identify the properties of the material; and
- .3 the UN number.

4.1.1.3 Where the cargo is dangerous goods and not generic Proper Shipping Name, or not otherwise specified (N.O.S) in the IMDG code, the BCSN shall consist of the Proper Shipping Name followed by the UN number."

APPENDIX 1

Individual schedules of solid bulk cargoes

Amendments to existing individual schedules

ALUMINA

4 In the individual schedule for "ALUMINA", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINA, CALCINED

5 In the individual schedule for "ALUMINA, CALCINED", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINA HYDRATE

6 In the individual schedule for "ALUMINA HYDRATE", under the section for "Hazard", in the first sentence, add the word "a" before "moisture content"; in the second sentence, replace the word "of the Code" with the words "of this Code" and under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINA SILICA

7 In the individual schedule for "ALUMINA SILICA", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINA SILICA, pellets

8 In the individual schedule for "ALUMINA SILICA, pellets", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINIUM FERROSILICON POWDER UN 1395

9 In the individual schedule for "ALUMINIUM FERROSILICON POWDER UN 1395", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINIUM FLUORIDE

10 In the individual schedule for "ALUMINIUM FLUORIDE", under the section for "Weather precautions", the words "less than its TML during voyage" is replaced with the words "less than its TML during loading operations and the voyage".

ALUMINIUM NITRATE UN 1438

11 In the individual schedule for "ALUMINIUM NITRATE UN 1438", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINIUM SILICON POWDER, UNCOATED UN 1398

12 In the individual schedule for "ALUMINIUM SILICON POWDER, UNCOATED UN 1398", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS UN 3170

13 In the individual schedule for "ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS UN 3170", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ALUMINIUM SMELTING/REMELTING BY-PRODUCTS, PROCESSED

14 In the individual schedule for "ALUMINIUM SMELTING/REMELTING BY-PRODUCTS, PROCESSED", under the section for "Hazard", in the second sentence, add the word "a" before "moisture content", in the third sentence, replace the word "of the Code" with the words "of this Code". Under the section for "Loading", replace the words "of the Code" with the words "of this Code". Under the section for "Clean-up", in the third sentence, replace the word "should" with "shall".

AMMONIUM NITRATE UN 1942

15 In the individual schedule for "AMMONIUM NITRATE UN 1942", under the section for "Loading", in the second sentence, replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

AMMONIUM NITRATE BASED FERTILIZER UN 2067

16 In the individual schedule for "AMMONIUM NITRATE BASED FERTILIZER UN 2067", under the section for "Loading", in the first sentence, replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

AMMONIUM NITRATE BASED FERTILIZER UN 2071

17 In the individual schedule for "AMMONIUM NITRATE BASED FERTILIZER UN 2071", under the section for "Loading", in the first sentence, replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)

18 In the individual schedule for "AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)", under the section for "Stowage and segregation", in the first sentence, replace the word "should" with "shall". Under the section for "Loading", in the first sentence, replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

AMMONIUM SULPHATE

19 In the individual schedule for "AMMONIUM SULPHATE", under the section for "Loading", in the third sentence, replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

ANTIMONY ORE AND RESIDUE

20 In the individual schedule for "ANTIMONY ORE AND RESIDUE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

BARIUM NITRATE UN 1446

21 In the individual schedule for "BARIUM NITRATE UN 1446", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

BARYTES

22 In the individual schedule for "BARYTES", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

BAUXITE

23 In the individual schedule for "BAUXITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

BIOSLUDGE

24 In the individual schedule for "BIOSLUDGE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

BORAX (PENTAHYDRATE CRUDE)

25 In the individual schedule for "BORAX (PENTAHYDRATE CRUDE)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

BROWN COAL BRIQUETTES

26 In the individual schedule for "BROWN COAL BRIQUETTES", in the appendix of the schedule, under the section for "Carriage", in 8.1, after the words "The company's", add "*" with the following footnote:

"* Refer to the SOLAS regulation IX/1.2."

and under the section for "Discharge", after the words "self-contained breathing apparatus", add "*" with the following footnote:

"* Refer to the *Revised recommendations for entering enclosed spaces aboard ships*, adopted by the Organization by resolution A.1050(27)."

BORAX, ANHYDROUS (crude or refined)

27 In the individual schedule for "BORAX, ANHYDROUS (crude or refined)", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

CALCIUM NITRATE UN 1454

28 In the individual schedule for "CALCIUM NITRATE UN 1454", under the section for "Loading", in the second sentence, replace the words "of the Code" with the words "of this Code".

CALCIUM NITRATE FERTILIZER

29 In the individual schedule for "CALCIUM NITRATE FERTILIZER", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

CARBORUNDUM

30 In the individual schedule for "CARBORUNDUM", under the section for "Loading", replace the words "of the Code" with the words "of this Code"; add the following text:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

and under the section for "Precautions", replace the word "should" with the word "shall".

CASTOR BEANS or CASTOR MEAL or CASTOR POMACE or CASTOR FLAKE UN 2969

31 In the individual schedule for "CASTOR BEANS or CASTOR MEAL or CASTOR POMACE or CASTOR FLAKE UN 2969", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CEMENT CLINKERS

32 In the individual schedule for "CEMENT CLINKERS", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CHAMOTTE

33 In the individual schedule for "CHAMOTTE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CHARCOAL

34 In the individual schedule for "CHARCOAL", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

CHOPPED RUBBER AND PLASTIC INSULATION

35 In the individual schedule for "CHOPPED RUBBER AND PLASTIC INSULATION", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CHROME PELLETS

36 In the individual schedule for "CHROME PELLETS", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CHROMITE ORE

37 In the individual schedule for "CHROMITE ORE ", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

CLAY

38 In the individual schedule for "CLAY", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CLINKER ASH

39 In the existing individual schedule for "CLINKER ASH", under the section for "Description", in the fourth sentence, the words "taken ou" are replaced with "discharged" twice. Under the section for "Hazard", in the second sentence, replace the word "of the Code" with the words "of this Code". Under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COAL

40 In the individual schedule for "COAL", under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

"1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

"4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and"

and under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". In the appendix, under the section for "2 Self-heating coals" in "Special precautions", in paragraph .5, after the words "and the company", add "*" with the following footnote:

"* Refer to the SOLAS regulation IX/1.2."

COAL SLURRY

41 In the individual schedule for "COAL SLURRY", under the section for "Hazard", replace the first sentence with:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

"1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

- ".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and"

and under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COAL TAR PITCH

- 42 In the individual schedule for "COAL TAR PITCH", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COARSE CHOPPED TYRES

- 43 In the individual schedule for "COARSE CHOPPED TYRES", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COARSE IRON AND STEEL SLAG AND ITS MIXTURE

- 44 In the individual schedule for "COARSE IRON AND STEEL SLAG AND ITS MIXTURE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

COKE

- 45 In the individual schedule for "COKE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COKE BREEZE

- 46 In the individual schedule for "COKE BREEZE", under the section for "Hazard", replace the first sentence with:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

- ".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

- ".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and".

and under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COLEMANITE

- 47 In the individual schedule for "COLEMANITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

COPPER GRANULES

48 In the individual schedule for "COPPER GRANULES", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

COPPER MATTE

49 In the individual schedule for "COPPER MATTE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

COPPER SLAG

50 In the individual schedule for "COPPER SLAG ", under the section for "Hazard", in the first sentence, add the word "a" before the words "moisture content". Under the section for "Loading", replace the first sentence with following:

"This cargo shall be trimmed to ensure that the height difference between peaks and troughs does not exceed 5% of the ship's breadth and that the cargo slopes uniformly from the hatch boundaries to the bulkheads to avoid steep surfaces of cargo that could collapse during voyage."

and under the section for "Carriage", add the following text at the end of the section:

"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."

COPRA (dry) UN 1363

51 In the individual schedule for "COPRA (dry) UN 1363", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". Under the section for "Precautions", after the words "concentration of oxygen", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

CRUSHED CARBON ANODES

52 In the individual schedule for "CRUSHED CARBON ANODES", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

CRYOLITE

53 In the individual schedule for "CRYOLITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

DIAMMONIUM PHOSPHATE (D.A.P.)

54 In the individual schedule for "DIAMMONIUM PHOSPHATE (D.A.P.)", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

DIRECT REDUCED IRON (A) Briquettes, hot-moulded

55 In the individual schedule for "DIRECT REDUCED IRON (A) Briquettes, hot-moulded", under the section for "Loading", in the sixth sentence, replace the words "of the Code" with the words "of this Code"; add the following text at the end of the section:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

under the section for "Precautions", in the last sentence, after the words "adjacent spaces", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

and under the sections for "Carriage" and "Discharge", replace the words "(>25% LEL)" with "(>25% lower explosive limit (LEL))". Under the section for "Clean-up", in the third sentence, replace the word "should" with the word "shall".

DIRECT REDUCED IRON (B) Lumps, pellets, cold-moulded briquettes

56 In the individual schedule for "DIRECT REDUCED IRON (B) Lumps, pellets, cold-moulded briquettes", under the section for "Loading", in the sentence "Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code", replace the words "of the Code" with the words "of this Code"; add the following text:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

under the section for "Precautions", in the sentence "All precautions shall be taken when entering the cargo spaces", after the words "entering the cargo spaces", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

and under the sections for "Carriage" and "Discharge", replace the words "(>25% LEL)" with "(>25% lower explosive limit (LEL))". Under the section for "Clean-up", in the second sentence, replace the word "should" with the word "shall".

DIRECT REDUCED IRON (C) By-product fines

57 In the individual schedule for "DIRECT REDUCED IRON (C) (By-product fines)", under the section for "Loading", in the sentence "Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code", replace the words "of the Code" with the words "of this Code"; and add the following text:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

under the section for "Precautions", in sixteenth sentence, after the words "to support life", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

and under the sections for "Carriage" and "Discharge", replace the words "(>25% LEL)" with "(>25% lower explosive limit (LEL))".

DISTILLERS DRIED GRAINS WITH SOLUBLES

58 In the individual schedule for "DISTILLERS DRIED GRAINS WITH SOLUBLES", under the section for "Loading", in the second sentence, replace the words "of the Code" with the words "of this Code".

DOLOMITE

59 In the individual schedule for "DOLOMITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

FELSPAR LUMP

60 In the individual schedule for "FELSPAR LUMP", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

FERROCHROME

61 In the individual schedule for "FERROCHROME", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

FERROCHROME, exothermic

62 In the individual schedule for "FERROCHROME, exothermic", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

FERROMANGANESE

63 In the individual schedule for "FERROMANGANESE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

FERRONICKEL

64 In the individual schedule for "FERRONICKEL", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

FERROPHOSPHORUS (including briquettes)

65 In the individual schedule for "FERROPHOSPHORUS (including briquettes)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

FERROSILICON UN 1408 with 30% or more but less than 90% silicon (including briquettes)

66 In the individual schedule for "FERROSILICON UN 1408 with 30% or more but less than 90% silicon (including briquettes)", replace the table in the section for "Characteristics" with the following:

"

Angle of repose	Bulk density (kg/m ³)		Stowage factor (m ³ /t)
Not applicable	1389 to 2083 (1111 to 1538 for briquettes)		0.48 to 0.72 (0.65 to 0.90 for briquettes)
Size	Class	Subsidiary risk	Group
Up to 300 mm Briquettes	4.3	6.1	B

"

under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code"; and replace the sentences "As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo." with the following:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

and under the section for "Operational requirements" in the appendix, in (vii), after the words "below 18%", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

FERROSILICON 25% to 30% silicon, or 90% or more silicon (including briquettes)

67 In the individual schedule for "FERROSILICON 25% to 30% silicon, or 90% or more silicon", the Bulk Cargo Shipping Name is replaced with following:

"FERROSILICON with at least 25% but less than 30% silicon, or 90% or more silicon"

In the table of "Characteristics", under the section for "Size", the words "Diameter: 2.54" are replaced with "Up to 300 mm Briquettes". Under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code"; and replace the sentences "As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo." with the following:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

and under the section for "Operational requirements" in the appendix, in (vii), after the words "below 18%", add "**" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS UN 2793 in a form liable to self-heating

68 In the individual schedule for "FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS UN 2793 in a form liable to self-heating", under the sections for "Discharge", after the words "appropriate breathing apparatus", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

FERROUS SULPHATE HEPTAHYDRATE

69 In the individual schedule for "FERROUS SULPHATE HEPTAHYDRATE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

FERTILIZERS WITHOUT NITRATES (non-hazardous)

70 In the individual schedule for "FERTILIZERS WITHOUT NITRATES (non-hazardous)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

FISH (IN BULK)

71 In the individual schedule for "FISH (IN BULK)", under the section for "Loading", replace the words "of the Code" with the words "of this Code". Under the section for "Carriage", replace the words "No special requirements" with the following:

"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."

FISHMEAL (FISHSCRAP), STABILIZED UN 2216 Anti-oxidant treated

72 In the individual schedule for "FISHMEAL (FISHSCRAP), STABILIZED UN 2216 Anti-oxidant treated", under the Bulk Cargo Shipping Name, delete the following text:

*"The provisions of this entry should **not** apply to consignments of fishmeal, Group C, which are accompanied by a certificate issued by the competent authority of the country of shipment, stating that the material has no self-heating properties when transported in bulk."*

and under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

FLUORSPAR

73 In the individual schedule for "FLUORSPAR", under the section for "Hazard", replace the first and second sentence with:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Loading", replace the words "of the Code" with the words "of this Code"; add the following text:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and".

and under the section for "Carriage", replace the sentence "No special requirements." with the following:

"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 capsizing of the ship, and give consideration to seeking emergency entry into a place of refuge."

FLY ASH, DRY

74 In the individual schedule for "FLY ASH, DRY", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". Under the section for "Clean-up", replace the words "FLY ASH" with "fly ash".

FLY ASH, WET

75 In the individual schedule for "FLY ASH, WET", under the section for "Hazard", replace the first sentence with:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and".

and under the section for "Loading", replace the words "of the Code" with the words "of this Code".

GLASS CULLET

76 In the existing individual schedule for "GLASS CULLET", at the end of the section for "Description", add the following text:

"It may also be flint flat glass cullet which may have a grey or ochre appearance caused by adherent glass dust. May have a slight odour caused by organic impurities (plastics, foil). Used for glass production (bottle industry)."

and replace the existing table of "Characteristics", with the following:

"

Angle of repose	Bulk density (kg/m³)	Stowage factor (m³/t)
Not applicable	600-1330	0.75-1.67
Size	Class	Group
Up to 2000 mm	Not applicable	C

"

GRAIN SCREENING PELLETS

77 In the individual schedule for "GRAIN SCREENING PELLETS", under the section for "Loading", in the first sentence, replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code", and delete the words "in accordance with the shipper's declaration of the angle of repose".

GRANULAR FERROUS SULPHATE

78 In the individual schedule for "GRANULAR FERROUS SULPHATE", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

GRANULATED NICKEL MATTE (LESS THAN 2% MOISTURE CONTENT)

79 In the individual schedule for "GRANULATED NICKEL MATTE (LESS THAN 2% MOISTURE CONTENT)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

GRANULATED SLAG

80 In the individual schedule for "GRANULATED SLAG", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

GRANULATED TYRE RUBBER

81 In the individual schedule for "GRANULATED TYRE RUBBER", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

GYPSUM

82 In the individual schedule for "GYPSUM", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

GYPSUM GRANULATED

83 In the individual schedule for "GYPSUM GRANULATED", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

ILMENITE CLAY

84 In the individual schedule for "ILMENITE CLAY", under the section for "Hazard", replace the first sentence with:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and".

and under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

ILMENITE (ROCK)

85 In the individual schedule for "ILMENITE (ROCK)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

ILMENITE SAND

86 In the existing individual schedule for "ILMENITE SAND", under the Bulk Cargo Shipping Name, delete the sentence "This cargo can be categorized as Group A or C.". Under the section for "Description", delete the sentences "The moisture content of this cargo in Group C is 1% to 2%. When moisture content is above 2%, this cargo is to be categorized in Group A." In the table of "Characteristics", in the column for "Group", delete the words "or C". Replace the text under the section for "Hazard" with following:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code. This cargo is non-combustible or has a low fire-risk."

and under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". Replace the text under the section for "Weather precautions" with the following:

"When a cargo is carried in a ship other than a 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 loading operations and the voyage;
- .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 under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and
- .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."

ILMENITE (UPGRADED)

87 In the individual schedule for "ILMENITE (UPGRADED)", under the section for "Hazard", in the first sentence, add the word "a" before the words "moisture content". Under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

IRON ORE FINES

988 In the individual schedule for "IRON ORE FINES", under the section for "Hazard", add the word "a" before the words "moisture content". Under the section for "Carriage", in the second sentence, delete the words "as far as practicable".

IRON ORE PELLETS

89 In the individual schedule for "IRON ORE PELLETS", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

IRON OXIDE, SPENT or IRON SPONGE, SPENT UN 1376 obtained from coal gas purification

90 In the individual schedule for "IRON OXIDE, SPENT or IRON SPONGE, SPENT UN 1376 obtained from coal gas purification", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

IRON OXIDE TECHNICAL

91 In the individual schedule for "IRON OXIDE TECHNICAL", under the section for "Hazard", add the word "a" before the words "moisture content".

IRONSTONE

92 In the individual schedule for "IRONSTONE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

LABRADORITE

93 In the individual schedule for "LABRADORITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

LEAD NITRATE UN 1469

94 In the individual schedule for "LEAD NITRATE UN 1469", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

LEAD ORE

95 In the individual schedule for "LEAD ORE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code" and replace the text "As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo." with the following:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

LIME (UNSLAKED)

96 In the individual schedule for "LIME (UNSLAKED)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

LIMESTONE

97 In the individual schedule for "LIMESTONE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

LINTED COTTON SEED with not more than 9% moisture and not more than 20.5% oil

98 In the individual schedule for "LINTED COTTON SEED with not more than 9% moisture and not more than 20.5% oil", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

under the section for "Precautions", after the words "concentration of oxygen", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

and under the section for "Carriage", replace the word "should" with the word "shall".

MAGNESIA (DEADBURNED)

99 In the individual schedule for "MAGNESIA (DEADBURNED)", under the section for "Loading", replace the words "of the Code" with the words "of this Code"; and add the following text:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

MAGNESIA (UNSLAKED)

100 In the individual schedule for "MAGNESIA (UNSLAKED)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

MAGNESITE, natural

101 In the individual schedule for "MAGNESITE, natural", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

MAGNESIUM NITRATE UN 1474

102 In the individual schedule for "MAGNESIUM NITRATE UN 1474", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

MAGNESIUM SULPHATE FERTILIZERS

103 In the individual schedule for "MAGNESIUM SULPHATE FERTILIZERS", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

MANGANESE ORE

104 In the individual schedule for "MANGANESE ORE", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". Replace the text "As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo." with the following:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

MANGANESE ORE FINES

105 In the individual schedule for "MANGANESE ORE FINES", under the section for "Hazard", in the first sentence, add the word "a" before the words "moisture content".

MARBLE CHIPS

106 In the individual schedule for "MARBLE CHIPS", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

METAL SULPHIDE CONCENTRATES

107 In the individual schedule for "METAL SULPHIDE CONCENTRATES", in the table of "Characteristics", under "Class", after the word "MHB", add "(SH) and/or (CR) and/or (TX)". Under the section for "Hazard", add a first sentence as follows:

"Some metal sulphide concentrates may have acute and long term health effects."

add the following text at the beginning of the section:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and".

under the section for "Loading", replace the first sentence with the following:

"This cargo shall be trimmed to ensure that the height difference between peaks and troughs does not exceed 5% of the ship's breadth and that the cargo slopes uniformly from the hatch boundaries to the bulkheads to avoid steep surfaces of cargo that could collapse during voyage."

and under the section for "Precautions", after the words "concentration of oxygen", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

Mineral Concentrates

108 In the individual schedule for "Mineral Concentrates", under the section for "Hazard", replace the first and second sentence with:

"The above materials may liquefy if shipped at a moisture content in excess of their transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Weather precautions", replace paragraphs .1 and .4 with the following sentences, respectively:

".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and

".4 the cargo may be handled during precipitation under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and".

and replace the text under the section for "Loading" with the following:

"This cargo shall be trimmed to ensure that the height difference between peaks and troughs does not exceed 5% of the ship's breadth and that the cargo slopes uniformly from the hatch boundaries to the bulkheads to avoid steep surfaces of cargo that could collapse during voyage.

When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

MONOAMMONIUM PHOSPHATE (M.A.P.)

109 In the individual schedule for "MONOAMMONIUM PHOSPHATE (M.A.P.)", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

NICKEL ORE

110 In the individual schedule for "NICKEL ORE", under the section for "Weather precautions", replace paragraph .1 with following:

".1 the moisture content of the cargo shall be kept less than its TML during loading operations and the voyage;"

and under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

PEANUTS (in shell)

111 In the individual schedule for "PEANUTS (in shell)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PEAT MOSS

112 In the individual schedule for "PEAT MOSS", under the section for "Hazard", add the following text at the beginning:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

and under the section for "Loading", replace the words "of the Code" with the words "of this Code". Under the section for "Precautions", after the words "a normal level", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

PEBBLES (sea)

113 In the individual schedule for "PEBBLES (sea)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PELLETS (concentrates)

114 In the individual schedule for "PELLETS (concentrates)", under the section for "Loading", replace the words "of the Code" with the words "of this Code"; and add the following text at the end of the section:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

PERLITE ROCK

115 In the individual schedule for "PERLITE ROCK", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PHOSPHATE (defluorinated)

116 In the individual schedule for "PHOSPHATE (defluorinated)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PHOSPHATE ROCK (calcined)

117 In the individual schedule for "PHOSPHATE ROCK (calcined)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PHOSPHATE ROCK (uncalcined)

118 In the individual schedule for "PHOSPHATE ROCK (uncalcined)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PIG IRON

119 In the individual schedule for "PIG IRON", under the section for "Loading", in the third sentence, replace the words "of the Code" with the words "of this Code".

PITCH PRILL

120 In the individual schedule for "PITCH PRILL", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

POTASH

121 In the individual schedule for "POTASH", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

POTASSIUM CHLORIDE

122 In the individual schedule for "POTASSIUM CHLORIDE", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

POTASSIUM NITRATE UN 1486

123 In the individual schedule for "POTASSIUM NITRATE UN 1486", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

POTASSIUM SULPHATE

124 In the individual schedule for "POTASSIUM SULPHATE", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

PUMICE

125 In the individual schedule for "PUMICE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

PYRITE (containing copper and iron)

126 In the individual schedule for "PYRITE (containing copper and iron)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

PYRITES, CALCINED (Calcined Pyrites)

127 In the individual schedule for "PYRITES, CALCINED (Calcined Pyrites)", under the section for "Hazard", replace the third sentence with the following:

"This cargo may liquefy if shipped at a moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of this Code."

under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

PYROPHYLLITE

128 In the individual schedule for "PYROPHYLLITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code"; add the following text at the end of the section:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

QUARTZ

129 In the individual schedule for "QUARTZ", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

QUARTZITE

130 In the individual schedule for "QUARTZITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non-fissile or fissile - excepted UN 2912

131 In the individual schedule for "RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non-fissile or fissile - excepted UN 2912", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I), non-fissile or fissile - excepted UN 2913

132 In the individual schedule for "RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I), non-fissile or fissile - excepted UN 2913", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

RASORITE (ANHYDROUS)

133 In the individual schedule for "RASORITE (ANHYDROUS)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

RUTILE SAND

134 In the individual schedule for "RUTILE SAND", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

SALT

135 In the individual schedule for "SALT", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SALT CAKE

136 In the individual schedule for "SALT CAKE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SALT ROCK

137 In the individual schedule for "SALT ROCK", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SAND

138 In the individual schedule for "SAND", under the section for "Loading", replace the words "of the Code" with the words "of this Code". Add the following text at the end of the section:

"When the stowage factor of this cargo is equal to or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

SAND, HEAVY MINERAL

139 In the individual schedule for "SAND, HEAVY MINERAL", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SAWDUST

140 In the individual schedule for "SAWDUST", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SCALE GENERATED FROM THE IRON AND STEEL MAKING PROCESS

141 In the individual schedule for "SCALE GENERATED FROM THE IRON AND STEEL MAKING PROCESS", under the section for "Hazard", add the word "a" before the words "moisture content".

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

142 In the individual schedule for "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", under the section for "Loading", replace the words "of the Code" with the words "of this Code". Under the section for "Precautions", after the words "a normal level", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

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

143 In the individual schedule for "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", in the sentence "when in solvent extracted seed cake, the oil or oil and moisture content exceeds the percentages stated above, guidance should be sought from the competent authorities." after BCSN, replace the word "should" with the word "shall". Under the section for "Loading", in the last sentence, replace the words "of the Code" with the words "of this Code". Under the section for "ventilation", replace the word "should" with the word "shall". Under the section for "Precautions", after the words "a normal level", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

SEED CAKE UN 2217 with not more than 1.5% oil and not more than 11% moisture

144 In the individual schedule for "SEED CAKE UN 2217 with not more than 1.5% oil and not more than 11% moisture", under the section for "Loading", in the second sentence, replace the words "of the Code" with the words "of this Code". Under the section for "Ventilation", replace the word "should" with the word "shall". Under the section for "Precautions", after the words "a normal level", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

SEED CAKE (non-hazardous)

145 In the individual schedule for "SEED CAKE (non-hazardous)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

SILICOMANGANESE (low carbon)

146 In the individual schedule for "SILICOMANGANESE (low carbon)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". Under the section for "Precautions", replace the word "should" with the word "shall"; After the words "has been effected", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

SILICON SLAG

147 In the individual schedule for "SILICON SLAG", in the existing individual schedule for "SILICON SLAG", in the table of "Characteristics", under the column "Bulk density (kg/m³)", the numerical value "2,300" is replaced with "1,500"; under the column for "Stowage factor (m³/t)", the numerical value "0.43" is replaced with "0.67". Under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code". And the second and third sentences are replaced with following:

"When the stowage factor of this cargo is equal or less than 0.56 m³/t, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be given to ensure that the tank top is not overstressed during the voyage and during loading by a pile of the cargo."

SODA ASH (Dense and light)

148 In the individual schedule for "SODA ASH (Dense and light)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SODIUM NITRATE UN 1498

149 In the individual schedule for "SODIUM NITRATE UN 1498", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE UN 1499

150 In the individual schedule for "SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE UN 1499", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

SOLIDIFIED FUELS RECYCLED FROM PAPER AND PLASTICS

151 In the individual schedule for "SOLIDIFIED FUELS RECYCLED FROM PAPER AND PLASTICS", under the section for "Loading", in the second sentence, replace the words "of the Code" with the words "of this Code". Under the section for "Precautions", after the words "sufficiently ventilated", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

SPODUMENE (UPGRADED)

152 In the individual schedule for "SPODUMENE (UPGRADED)", under the section for "Hazard", add the word "a" before the words "moisture content".

STAINLESS STEEL GRINDING DUST

153 In the individual schedule for "STAINLESS STEEL GRINDING DUST", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

STONE CHIPPINGS

154 In the individual schedule for "STONE CHIPPINGS", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SUGAR

155 In the individual schedule for "SUGAR", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SULPHUR (formed, solid)

156 In the individual schedule for "SULPHUR (formed, solid)", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

SULPHUR UN 1350 (crushed lump and coarse grained)

157 In the individual schedule for "SULPHUR UN 1350 (crushed lump and coarse grained)", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

SUPERPHOSPHATE

158 In the individual schedule for "SUPERPHOSPHATE", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

SUPERPHOSPHATE (triple, granular)

159 In the individual schedule for "SUPERPHOSPHATE (triple, granular)", under the section for "Loading", replace the words "of the Code" with the words "of this Code". Under the sections for "Precautions" and "Clean-up", respectively, replace the word "should" with the word "shall".

TACONITE PELLETS

160 In the individual schedule for "TACONITE PELLETS", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

TALC

161 In the individual schedule for "TALC", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

TANKAGE

162 In the individual schedule for "TANKAGE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

TAPIOCA

163 In the individual schedule for "TAPIOCA", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

UREA

164 In the individual schedule for "UREA", under the section for "Loading", replace the words "under sections 4, 5 and 6 of the Code" with the words "under sections 4 and 5 of this Code".

VANADIUM ORE

165 In the individual schedule for "VANADIUM ORE", under the section for "Loading", replace the words "of the Code" with the words "of this Code"; add the following text at the end of the section:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

and under the section for "Precautions", replace the word "should" with the word "shall".

VERMICULITE

166 In the individual schedule for "VERMICULITE", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

WHITE QUARTZ

167 In the individual schedule for "WHITE QUARTZ", under the section for "Loading", replace the words "of the Code" with the words "of this Code".

WOODCHIPS

168 In the individual schedule for "WOODCHIPS", under the section for "Loading", replace the words "of the Code" with the words "of this Code". Under the section for "Precautions", in the first and second sentences, respectively, replace the word "should" with the word "shall"; after the words "oxygen level is 20.7%", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

WOOD PELLETS CONTAINING ADDITIVES AND/OR BINDERS

169 In the individual schedule for "WOOD PELLETS CONTAINING ADDITIVES AND/OR BINDERS", under the section for "Description", the fifth sentence is replaced with the following:

"The raw material is compressed to approximately one-third of its original volume. The finished wood pellets typically have a moisture content of 4% to 8%."

under the section for "Loading", replace the words "under sections 4, 5 and 6 of this Code" with the words "under sections 4 and 5 of this Code".

and under the section for "Precautions", after the words "carbon monoxide <100 ppm", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

WOOD PELLETS NOT CONTAINING ANY ADDITIVES AND/OR BINDERS

170 In the individual schedule for "WOOD PELLETS NOT CONTAINING ANY ADDITIVES AND/OR BINDERS", under the section for "Description", the fifth sentence is replaced with the following:

"The raw material is compressed to approximately one-third of its original volume. The finished wood pellets typically have a moisture content of 4% to 8%."

under the section for "Loading", replace the words "under sections 4, 5 and 6 of this Code" with the words "under sections 4 and 5 of this Code". Under the section for "Precautions", after the words "carbon monoxide <100 ppm", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

Wood Products – General

171 In the individual schedule for "Wood Products - General", under the section for "Precautions", after the words "oxygen level is 21%", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

and under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

WOOD TORREFIED

172 In the individual schedule for "WOOD TORREFIED", under the section for "Loading", replace the words "section 4, 5 and 6 of the Code" with the words "section 4 and 5 of this Code". Under the section for "Precautions", after the words "carbon monoxide < 100 ppm", add "*" with the following footnote:

"* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

ZINC ASHES UN 1435

173 In the individual schedule for "ZINC ASHES UN 1435", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

ZINC SLAG

174 In the individual schedule for "ZINC SLAG", under the section for "Hazard", add the word "a" before the words "moisture content". Under the section for "Loading", replace the first sentence with the following:

"This cargo shall be trimmed to ensure that the height difference between peaks and troughs does not exceed 5% of the ship's breadth and that the cargo slopes uniformly from the hatch boundaries to the bulkheads to avoid steep surfaces of cargo that could collapse during voyage."

and under the section for "Carriage", add the following text at the end of the section:

"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."

ZIRCON KYANITE CONCENTRATE

175 In the individual schedule for "ZIRCON KYANITE CONCENTRATE", under the section for "Hazard", add the word "a" before the words "moisture content". Under the section for "Loading", replace the second and the third sentences with the following text:

"As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that the tank top is not overstressed during voyage and during loading by a pile of the cargo."

ZIRCONSAND

176 In the individual schedule for "ZIRCONSAND", under the section for "Loading", in the first sentence, replace the words "of the Code" with the words "of this Code".

New individual schedules

177 Insert the following new individual schedules accordingly in alphabetical order:

"METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759 (see also Mineral Concentrates schedules)

This schedule shall only apply to cargoes that would fall under Packing Group (PG) III as specified in the IMDG Code if they were carried in a packaged form.

Description

Mineral concentrates are refined ores in which the valuable components have been enriched by eliminating the bulk of waste materials. Generally the particle size is small although agglomerates sometimes exist in concentrates which have not been freshly produced.

The most common concentrates in this category are: zinc concentrates, lead concentrates, copper concentrates and low grade middling concentrates.

Characteristics

Angle of repose	Bulk density (kg/m³)	Stowage factor (m³/t)
Not applicable	1,700 to 3,230	0.31 to 0.59
Size	Class	Group
Various	8*	A and B

*This material may also meet MHB criteria of self-heating solids and/or solids that evolve toxic gas when wet.

Hazard

This cargo may liquefy if shipped at a moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of the Code.

Some sulphide concentrates are liable to oxidation and may have a tendency to self-heat, with associated oxygen depletion and emission of toxic fumes. Moisture in the cargo will form sulphurous acid which is corrosive to steel.

Stowage & Segregation

Unless determined by the competent authority, segregation as required for class 4.2 and Class 8 materials.

"Separated from" foodstuffs.

Hold cleanliness

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

Weather precautions

When this cargo is carried in a ship other than a 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 loading operations and the voyage;
- .2 unless expressly provided otherwise in this individual schedule, the cargo shall not be handled during precipitation;
- .3 unless expressly provided otherwise in this 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 under the conditions stated in the procedures required in subsection 4.3.3 of this Code; and
- .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 this Code.

When the stowage factor of this cargo is equal or less than 0.56 m³/t, the tanktop may be overstressed unless the cargo is evenly spread across the tanktop to equalize the weight distribution. Due consideration shall be given to ensure that the tanktop is not overstressed during the voyage and during loading by a pile of the cargo forming.

Precautions

Entry into the cargo space for this cargo shall not be permitted until the space has been ventilated and the atmosphere tested for concentration of oxygen*. Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust of this cargo. Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

Bilge system of a cargo space to which this cargo is to be loaded shall be tested to ensure it is working. Persons who may be exposed to the dust of the cargo shall wear gloves, goggles or other equivalent dust eye-protection and dust filter masks. Those persons shall wear protective clothing, as necessary.

When a Metal Sulphide Concentrate is considered as presenting a low fire-risk, the carriage of such cargo on a ship not fitted with a fixed gas fire extinguishing system shall be subject to the Administration's authorization as provided by SOLAS regulation II-2/10.7.1.4.

Ventilation

The cargo shall not be ventilated during the voyage

Carriage

The appearance of the surface of the cargo shall be checked regularly during the voyage. If free water above the cargo or fluid state of the cargo is observed during the voyage, the master shall take appropriate action to prevent cargo shifting and potential capsize of the ship, and give consideration to seeking emergency entry into a place of refuge. For quantitative measurements of oxygen and toxic fumes liable to be evolved by the cargo, suitable detectors for each gas and fume or combination of these shall be on board while this cargo is carried. The detectors shall be suitable for use in an atmosphere without oxygen.

The concentrations of these gases in the cargo spaces carrying this cargo shall be measured regularly during voyage, and the results of the measurements shall be recorded and kept on board.

Discharge

No special requirements.

Clean up

Ensure that all residues are washed away and the holds thoroughly dried. Wet dust or residues will form corrosive sulphurous acid, which is dangerous to personnel and will corrode steel.

Emergency procedures

<p style="text-align: center;">Special emergency equipment to be carried</p> <p style="text-align: center;">Protective clothing (gloves, boots, coveralls, headgear)</p> <p style="text-align: center;">Self-contained breathing apparatus.</p>
<p style="text-align: center;">Emergency procedures</p> <p style="text-align: center;">Wear protective clothing and self-contained breathing apparatus.</p> <p style="text-align: center;">Emergency action in the event of fire</p> <p style="text-align: center;">Batten down; use ship's fixed firefighting installation if fitted. Exclusion of air may be sufficient to control the fire. Do not use water.</p> <p style="text-align: center;">Medical first aid</p> <p style="text-align: center;">Refer to the Medical First Aid Guide (MFAG), as amended.</p>

Remarks

Fire may be indicated by the smell of sulphur dioxide.

* Refer to the Revised recommendations for entering enclosed spaces aboard ships, adopted by the Organization by resolution A.1050(27)."

"MONOAMMONIUM PHOSPHATE (M.A.P.), MINERAL ENRICHED COATING

Description

This cargo is monoammonium phosphate (M.A.P.) with a mineral enriched coating. Odourless, brownish-grey granules. It is hygroscopic and can be very dusty.

Characteristics

Angle of repose	Bulk density (kg/m ³)	Stowage factor (m ³ /t)
35° to 40°	826 to 1,000	1.0 to 1.21
Size	Class	Group
Up to 4 mm	MHB (CR)	B

Hazard

This cargo has a pH of 4.5 and in the presence of moisture can be highly corrosive to eye and skin.

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

This cargo will cake if wet.

This cargo will decompose burlap or canvas cloth covering bilge wells. Continuous carriage of this cargo may have detrimental structural effects over a long period of time.

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 this Code.

Precautions

Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust of the cargo. Bilge wells of the cargo spaces shall be protected from ingress of the cargo. Due consideration shall be paid to protect equipment from the dust of the cargo. Persons who may be exposed to the dust of the cargo shall wear gloves, goggles or other equivalent dust eye-protection and dust filter masks. Those persons shall wear protective clothing, as necessary.

Ventilation

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

Carriage

Condensation in the cargo spaces carrying this cargo, sweating of this cargo and entering of water from hatch covers to the cargo spaces shall be checked regularly during the voyage. Due attention shall be paid to the sealing of hatches of the cargo spaces.

Discharge

This cargo is hygroscopic and may cake in overhangs, impairing safety during 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, particular attention shall be paid to bilge wells of the cargo spaces.

Emergency procedures

<p style="text-align: center;">Special emergency equipment to be carried Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus.</p>
<p style="text-align: center;">Emergency procedures Wear protective clothing and self-contained breathing apparatus.</p>
<p style="text-align: center;">Emergency action in the event of fire Batten down; use ship's fixed fire-fighting installation, if fitted.</p>
<p style="text-align: center;">Medical first aid Refer to the Medical First Aid Guide (MFAG), as amended.</p>

"MONOCALCIUMPHOSPHATE (MCP)

Description

The product consists of Monocalciumphosphate, monohydrate. Granulated. Light grey. Odourless.

Characteristics

Angle of repose	Bulk density (kg/m ³)	Stowage factor (m ³ /t)
Approximately 32°	900 to 1,100	0.91 to 1.11
Size	Class	Group
0.2 to 2 mm	MHB (CR)	A and B

Hazard

This cargo is non-combustible or has a low fire-risk.
Potential inhalation hazard and eye irritation from Monocalciumphosphate dust during handling, placement and transportation.

Stowage & segregation

No special requirements.

Hold cleanliness

No special requirements.

Weather precautions

When a cargo is carried in a ship other than a 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 loading operations and the voyage;

- .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 under the conditions stated in the procedures required in subsection 4.3.3 of this Code; and
- .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 this Code.

Precautions

Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust of the cargo. Bilge wells of the cargo spaces shall be protected from ingress of the cargo. Due consideration shall be paid to protect equipment from the dust of the cargo. Persons who may be exposed to the dust of the cargo shall wear protective clothing, gloves, goggles or other equivalent dust eye-protection and dust filter masks, as necessary.

Ventilation

No special requirements.

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 capsizing of the ship, and give consideration to seeking emergency entry into a place of refuge.

Discharge

No special requirements.

Clean-up

Avoid handling which creates dust.

[Emergency procedures

<p>Special emergency equipment to be carried</p> <p>Protective clothing (gloves, boots, coveralls, headgear)</p> <p>Self-contained breathing apparatus.</p>
<p>Emergency procedures</p> <p>Wear protective clothing and self-contained breathing apparatus.</p> <p>Emergency action in the event of fire</p> <p>Batten down; use ship's fixed firefighting installation if fitted.</p> <p>Exclusion of air may be sufficient to control the fire. Do not use water.</p> <p>Medical first aid</p> <p>Refer to the Medical First Aid Guide (MFAG), as amended.</p>

]"

"BLAST FURNACE IRON BY-PRODUCTS

Description

This cargo is a by-product from iron ore smelting. Grey or black, small to large size lumps (up to 45 tons), granulate iron included. Depending on the dominating size blast furnace iron by-products are called differently:

Iron pan edges	K1-K3 bears
Separation of iron	Steel bears
Granulate iron	Pig iron by-product

Characteristics

Angle of repose	Bulk density (kg/m³)	Stowage factor (m³/t)
Not applicable	Varies	Varies
Size	Class	Group
Varies	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

No special requirements.

Weather precautions

No special requirements.

Loading

Trim in accordance with the relevant provisions in compliance with sections 4 and 5 of this Code.

The tanktop may be overstressed unless the cargo is evenly spread across the tanktop to equalize the 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. Large pieces shall not be dropped in the cargo hold and placement of very large lumps shall be such that the tanktop is not overstressed by point loads. The weight distribution in the hold shall be considered during loading.

Precautions

Bilge wells of the cargo spaces shall be protected from ingress of the cargo.

Ventilation

No special requirements.

Carriage

No special requirements.

Discharge

When this cargo is discharged by magnet or spider grab:

- .1 the deck and deck machineries shall be protected from falling cargo; and
- .2 damages to the ship shall be checked, after the completion of discharge.

Clean-up

No special requirements."

"SAND, MINERAL CONCENTRATE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) UN 2912

Description

This cargo is generally a concentrate stream resulting from the processing of heavy mineral sands. Such mineral sand concentrates are characterized by their heavy bulk density and relatively fine grain size. This schedule includes concentrates of sands containing natural or depleted uranium and thorium, including metals, mixtures and compounds.

Abrasive. May be dusty. This cargo is cohesive if moisture content is above 1%.

Characteristics

Angle of repose	Bulk density (kg/m ³)	Stowage factor (m ³ /t)
Approximately 35°	2,200 to 3,225	0.31 to 0.45
Size	Class	Group
Fine Particles up to 2mm	7*	A and B

* This material also meets MHB criteria of toxic solids and corrosive solids.

Hazard

This cargo may liquefy if shipped at a moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of this Code.

Low radiotoxicity.

May cause long-term health effects and skin irritation.

Prolonged and repeated exposure to silica dust can result in respiratory disease.

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

Stowage & segregation

"Separated from" foodstuffs.

Hold cleanliness

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

Weather precautions

When a cargo is carried in a ship other than a 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 loading operations and the voyage;
- .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 under the conditions stated in the procedures required in subsection 4.3.3 of this Code; and
- .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 this Code. As the density of the cargo is extremely high, the tanktop may be overstressed unless the cargo is evenly spread across the tanktop to equalize the weight distribution. Due consideration shall be paid to ensure that tanktop is not overstressed during voyage and during loading by a pile of the cargo.

Precautions

Personnel shall not be unnecessarily exposed to dust of this cargo. Persons who may be exposed to the dust of the cargo shall wear protective clothing, goggles or other equivalent dust eye-protection and facemasks. There shall be no leakage outside the cargo space in which this cargo is stowed.

Ventilation

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

Carriage

All instructions provided by the shipper shall be followed for the carriage of this cargo. 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 capsizing of the ship, and give consideration to seeking emergency entry into a place of refuge.

Discharge

All instructions provided by the shipper shall be followed for the discharge of this cargo.

Clean-up

Cargo spaces used for this cargo shall not be used for other goods until decontaminated. Refer to subsection 9.3.2.3 of this Code.

Emergency procedures

Special emergency equipment to be carried Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus.
Emergency procedures Wear protective clothing and self-contained breathing apparatus.
Emergency action in the event of fire Batten down; use ship's fixed fire-fighting installation, if fitted. Use water spray to control spread of dust, if necessary.
Medical first aid Refer to the Medical First Aid Guide (MFAG), as amended.

Remarks

Most materials are likely to be non-combustible. Speedily collect and isolate potentially contaminated equipment and cover. Seek expert advice."

"SILICOMANGANESE (carbo-thermic)

Description

This material is a result of a carbo-thermic reduction process. A ferroalloy comprising principally manganese and silicon, mainly used as a deoxidizer and alloying element in the steel-making process. Particles or lumps of metallic-silver to dark-grey colour metal.

Characteristics

Angle of repose	Bulk density (kg/m ³)	Stowage factor (m ³ /t)
Not applicable	3,100 to 4,000	0.25 to 0.32
Size	Class	Group
Fines to 80 mm	Not Applicable	C

Hazard

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

Stowage & segregation

"Separated from" acids, alkalis, oxidising and reducing agents and foodstuffs.

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 this Code. As the density of the cargo is extremely high, the tank top may be overstressed unless the cargo is evenly spread across the tank top to equalize the weight distribution. Due consideration shall be paid to ensure that tank top is not overstressed during voyage and during loading by a pile of the cargo.

Precautions

No special requirements.

Ventilation

No special requirements.

Carriage

No special requirements.

Discharge

No special requirements.

Clean-up

No special requirements."

"SYNTHETIC CALCIUM FLUORIDE

Description

Odourless white-light brown material containing up to 70-80% calcium fluoride, 5-10% aluminium fluoride and 10-20% silicon dioxide.

The product consists of large particles and lumps which may break up during transport generating powder.

The product is insoluble in water.

Characteristics

Angle of repose	Bulk density (kg/m ³)	Stowage factor (m ³ /t)
Not applicable	700 to 900	1.11 to 1.43
Size	Class	Group
Up to 30 mm	Not applicable	A

Hazard

This cargo may liquefy if shipped at a moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of this Code.

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

Stowage & segregation

"Separated from" hydrofluoric acid, chlorine fluoride, manganese fluoride and oxygen difluoride.

Hold cleanliness

No special requirements.

Weather precautions

When a cargo is carried in a ship other than a 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 loading operations and the voyage;
- .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 under the conditions stated in the procedures required in subsection 4.3.3 of this Code; and
- .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 this Code.

Precautions

Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust of the cargo. Bilge wells of the cargo spaces shall be protected from ingress of the cargo. Due consideration shall be paid to protect equipment from the dust of the cargo.

Ventilation

No special requirements.

Carriage

The appearance of the surface of the cargo shall be checked regularly during the voyage. If free water above the cargo or fluid state of the cargo is observed during the voyage, the master shall take appropriate action 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

No special requirements."

"SYNTHETIC SILICON DIOXIDE

Description:

Odourless white powder containing up to 85% silicon dioxide, about 7% aluminium fluoride and up to 8% crystal water in dry weight.

The product has very low solubility in water.

Characteristics:

Angle of repose	Bulk density (kg/m ³)	Stowage factor (m ³ /t)
Approximately 40°	300 to 500	2.00 to 3.33
Size	Class	Group
Up to 0.1 mm	Not applicable	A

Hazard

This cargo may liquefy if shipped at a moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of this Code.

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

Stowage & segregation

"Separated from" hydrofluoric acid, chlorine fluoride, manganese fluoride and oxygen difluoride.

Hold cleanliness

No special requirements.

Weather precautions

When a cargo is carried in a ship other than a 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 loading operations and the voyage;

- .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 under the conditions stated in the procedures required in subsection 4.3.3 of this Code; and
- .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 this Code.

Precautions

Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust of the cargo. Bilge wells of the cargo spaces shall be protected from ingress of the cargo.

Due consideration shall be paid to protect equipment from the dust of the cargo.

Ventilation

No special requirements.

Carriage

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

Discharge

No special requirements.

Clean-up

No special requirements."

"TITANOMAGNETITE SAND

Description

Titanomagnetite Sand has a nominal iron content of 57%.

Characteristics

Angle of repose	Bulk density (kg/m³)	Stowage factor (m³/t)
Not Applicable	2,740 to 2,820	0.35 to 0.36
Size	Class	Group
Up to 0.4 mm	Not applicable	A

Hazard

This cargo may liquefy if shipped at a moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of this Code.

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

Stowage & Segregation

No special requirements.

Hold Cleanliness

No special requirements.

Weather Precautions

When a cargo is carried in a ship other than a 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 loading operations and the voyage;
- .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 under the conditions stated in the procedures required in paragraph 4.3.3 of this Code; and
- .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

Cargo shall be trimmed to avoid steep surfaces of cargo that could collapse during voyage. As the density of the cargo is extremely high, the tanktop may be overstressed unless the cargo is evenly spread across the tanktop to equalize the weight distribution. Due consideration shall be given to ensure that the tanktop is not overstressed during the voyage and during loading by a pile of the cargo.

Precautions

Bilges wells shall be clean, dry and covered to prevent ingress of cargo. Bilge covers shall not significantly degrade the capacity or operation of the bilge system. Bilges shall be sounded and pumped out, as necessary, throughout the voyage.

Ventilation

No special requirements.

Carriage

Unless this material is carried in a ship complying with the requirements in subsection 7.3.2 of this Code, the appearance of the surface of the cargo shall be checked regularly during the voyage. If free water above the cargo or fluid state of the cargo is observed during the voyage, the master shall take appropriate action 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 shall be checked and any blockage shall be removed. If the ship is fitted with a de-watering system of the cargo spaces, after discharge of this cargo, the system shall be checked and any blockage in the systems shall be removed."

APPENDIX 3

Properties of solid bulk cargoes

1 Non-cohesive cargoes

1.1 The following cargoes are non-cohesive when dry:

178 In the list, add the following new entries in alphabetical order:

"MONOAMMONIUM PHOSPHATE (M.A.P.), MINERAL ENRICHED COATING"
 "MONOCALCIUMPHOSPHATE (MCP)"
 "SAND, MINERAL CONCENTRATE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) UN 2912"
 "SYNTHETIC SILICON DIOXIDE"

APPENDIX 4

INDEX

179 In the column of "Group", in the entries for "Bakery materials", "Barley malt pellets", "Beet, extracted", "Bran pellets", "Brewer's grain pellets", "Canola pellets", "Coconut", "Copra", "Gluten pellets", "Groundnuts, meal", "Hominy chop", "Linseed", "Maize", "Meal, oily", "Mill feed pellets", "Niger seed, expellers", "Oil cake", "Palm kernel", "Peanuts", "Pellets, cereal", "Pollard pellets", "Rape seed, expelled", "Rice bran", "Rice broken", "Safflower seed", "Seed expellers, oily", "Soya bean, expelled", "Strussa pellets", "Sunflower seed, expelled", and "Toasted meals" delete the words "or C".

180 In the entry for "ILMENITE SAND", in the column of "Group", delete the words "or C".

181 Insert the following new entries in alphabetical order:

Material	Group	References
BLAST FURNACE IRON BY-PRODUCTS	C	
Bottom ash	A and B	see CLINKER ASH
Silicon dross	C	see SILICON SLAG
METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759	A and B	
MONOAMMONIUM PHOSPHATE (M.A.P.), MINERAL ENRICHED COATING	B	
MONOCALCIUMPHOSPHATE (MCP)	A and B	
SAND, MINERAL CONCENTRATE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) UN 2912	A and B	
SILICOMANGANESE (carbo-thermic)	C	
SYNTHETIC CALCIUM FLUORIDE	A	
SYNTHETIC SILICON DIOXIDE	A	
TITANOMAGNETITE SAND	A	

"

APPENDIX 5

***Bulk Cargo Shipping Names in three languages
(English, Spanish and French)***

182 In Appendix 5 insert the following new entries in the corresponding alphabetical order:

ENGLISH	FRENCH	SPANISH
BLAST FURNACE IRON BY-PRODUCTS	SOUS-PRODUITS DU FER OBTENU DANS LES HAUTS-FOURNEAUX	SUBPRODUCTOS DEL HIERRO OBTENIDO EN ALTOS HORNOS
METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759	CONCENTRÉS DE SULFURES MÉTALLIQUES, CORROSIFS, NO ONU 1759	CONCENTRADOS DE SULFUROS METÁLICOS, CORROSIVOS (Nº ONU 1759)
MONOAMMONIUM PHOSPHATE (M.A.P.), MINERAL ENRICHED COATING	MONOPHOSPHATE D'AMMONIUM, REVÊTEMENT ENRICHÉ EN MINÉRAUX	FOSFATO MONOAMÓNICO CON RECUBRIMIENTO DE MINERAL ENRIQUECIDO
MONOCALCIUMPHOSPHATE (MCP)	PHOSPHATE MONOCALCIQUE EN VRAC	FOSFATO MONOCÁLCICO (MCP)
"SAND, MINERAL CONCENTRATE, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) UN 2912	MATIÈRES RADIOACTIVES DE FAIBLE ACTIVITÉ SPÉCIFIQUE (LSA-I), NO ONU 2912, SABLES, CONCENTRÉS DE MINÉRAUX	ARENAS DE CONCENTRADOS DE MINERALES (MATERIAL RADIATIVO DE BAJA ACTIVIDAD ESPECÍFICA (BAE-I), Nº ONU 2912)
SILICOMANGANESE (carbo-thermic)	SILICOMANGANÈSE (carbothermique)	SILICOMANGANESO (CARBOTÉRMICO)
SYNTHETIC CALCIUM FLUORIDE	FLUORURE DE CALCIUM DE SYNTHÈSE	FLUORURO DE CALCIO SINTÉTICO
SYNTHETIC SILICON DIOXIDE	DIOXYDE DE SILICIUM DE SYNTHÈSE	DIÓXIDO DE SILICIO SINTÉTICO
TITANOMAGNETITE SAND	SABLE TITANOMAGNÉTITE	ARENA DE TITANOMAGNETITA

ANNEX 2

DRAFT MSC CIRCULAR

LISTS OF SOLID BULK CARGOES FOR WHICH A FIXED GAS FIRE-EXTINGUISHING SYSTEM MAY BE EXEMPTED OR FOR WHICH A FIXED GAS FIRE-EXTINGUISHING SYSTEM IS INEFFECTIVE

1 The Maritime Safety Committee, at its sixty-fourth session (5 to 9 December 1994), agreed that there was a need to provide Administrations with guidelines regarding the provisions of SOLAS regulation II-2/10 concerning exemptions from the requirements for fire extinguishing systems.

2 Consequently, the Committee approved MSC/Circ.671 whereby it agreed to:

- .1 a list of solid bulk cargoes, for which a fixed gas fire-extinguishing system may be exempted (table 1) and recommended Member Governments to take into account the information contained in table 1 when granting exemptions under the provisions of SOLAS regulation II-2/10.7.1.4; and
- .2 a list of solid bulk cargoes for which a fixed gas fire-extinguishing system is ineffective (table 2), and recommended that cargo spaces in a ship engaged in the carriage of cargoes listed in table 2 be provided with a fire extinguishing system which provides equivalent protection. The Committee also agreed that Administrations should take account of the provisions of SOLAS regulation II 2/19.3.1 when determining suitable requirements for an equivalent fire-extinguishing system.

3 The Maritime Safety Committee, at its seventy-ninth session (1 to 10 December 2004), reviewed the above-mentioned tables and approved MSC.1/Circ.1146. The Committee decided that the annexed tables should be periodically reviewed and invited Member Governments to provide the Organization, when granting exemptions to ships for the carriage of cargoes not included in table 1, with data on the non-combustibility or fire risk properties of such cargoes. Member Governments were also requested to provide the Organization, when equivalent fire extinguishing systems are required for the agreed carriage of cargoes not included in table 2, with data on the inefficiency of fixed gas fire-extinguishing systems for such cargoes.

4 The Maritime Safety Committee, at its eighty-ninth session (11 to 20 May 2011), noting the mandatory status of the IMSBC Code, reviewed the aforementioned lists of solid bulk cargoes to align certain names in the lists with those in the recent version of the IMDG Code and approved MSC/Circ.1395 on Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective, superseding MSC.1/Circ.1146. The Maritime Safety Committee, at its ninety-second session (12 to 21 June 2013), approved a revision to MSC.1/Circ.1395.

5 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), considering the proposal by the Sub-Committee on Carriage of Cargoes and Containers, at its first session, approved a revision to MSC.1/Circ.1395/Rev.1, as set out in tables 1 and 2 of the annex.

[6 The Maritime Safety Committee, at its [ninety-eighth session (xx xx 2017)], considering the proposal by the Sub-Committee on Carriage of Cargoes and Containers, at its third session, approved a revision to MSC.1/Circ.1395/Rev.2, as set out in tables 1 and 2 of the annex.]

7 The purpose of this circular is to provide guidance to Administrations. It should not, however, be considered as precluding Administrations from their right to grant exemptions for cargoes not included in table 1 or to impose any conditions when granting such exemptions under the provisions of SOLAS regulation II-2/10.7.1.4.

8 This circular supersedes MSC.1/Circ.1395/Rev.2.

ANNEX

Note: The shadow text shows the new substances incorporation and corrections to the existing circular, these are not to be highlighted in the final revision of the MSC Circular.

TABLE 1

**LIST OF SOLID BULK CARGOES FOR WHICH A FIXED
GAS FIRE-EXTINGUISHING SYSTEM MAY BE EXEMPTED**

- 1 Cargoes including, but not limited to, those listed in regulation II-2/10:
 - Ore
 - Coal (COAL and BROWN COAL BRIQUETTES)
 - Grain
 - Unseasoned timber

- 2 Cargoes listed in the International Maritime Solid Bulk Cargoes (IMSBC) Code, which are not combustible or constitute a low fire-risk, as follows:
 - .1 all cargoes not categorized into Group B in the IMSBC Code; and
 - .2 the following cargoes categorized into Group B in the IMSBC Code:
 - ALUMINA HYDRATE
 - ALUMINIUM SMELTING BY-PRODUCTS, UN 3170
(Both the names ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS are in use as proper shipping name)
 - ALUMINIUM FERROSILICON POWDER, UN 1395
 - ALUMINIUM SILICON POWDER, UNCOATED, UN 1398
 - AMORPHOUS SODIUM SILICATE LUMPS
 - BORIC ACID
 - CALCINED PYRITES (Pyritic ash)
 - CLINKER ASH
 - COAL TAR PITCH
 - DIRECT REDUCED IRON (A) Briquettes, hot moulded
 - FERROPHOSPHORUS (including briquettes)
 - FERROSILICON, with more than 30% but less than 90% silicon, UN 1408
 - FERROSILICON, with at least 25% but less than 30% silicon, or 90% or more silicon
 - FLUORSPAR (calcium fluoride)
 - GRANULATED NICKEL MATTE (LESS THAN 2% MOISTURE CONTENT)
 - LIME (UNSLAKED)
 - LOGS
 - MAGNESIA (UNSLAKED)
 - PEAT MOSS
 - PETROLEUM COKE*
 - PITCH PRILL
 - PULP WOOD

* When loaded and transported under the provisions of the IMSBC Code.

RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY MATERIAL (LSA-1),
UN 2912 (non-fissile or fissile – excepted)
RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECT(S)
(SCO-I or SCO-II), UN 2913 (non-fissile or fissile – excepted)
ROUNDWOOD
SAW LOGS
SILICOMANGANESE
SULPHUR, UN 1350
TIMBER
VANADIUM ORE
WOODCHIPS, with moisture content of 15% or more
WOOD PELLETS (NOT CONTAINING ANY ADDITIVES AND/OR
BINDERS)
ZINC ASHES, UN 1435

- .3 Cargoes assigned to the following generic Group B shipping schedules when they do not exhibit any self-heating, flammability, or water-reactive flammability hazards in accordance with the MHB tests and classification criteria contained in the Code:

METAL SULPHIDE CONCENTRATES
METAL SULPHIDE CONCENTRATES, CORROSIVE UN 1759

- 3 Solid bulk cargoes which are not listed in the IMSBC Code, provided that:
- .1 they are assessed in accordance with section 1.3 of the Code;
- .2 they do not present hazards of Group B as defined in the Code; and
- .3 a certificate has been provided by the competent authority of the port of loading to the master in accordance with 1.3.2 of the Code.

TABLE 2

LIST OF SOLID BULK CARGOES FOR WHICH A FIXED GAS FIRE-EXTINGUISHING SYSTEM IS INEFFECTIVE AND FOR WHICH A FIRE-EXTINGUISHING SYSTEM GIVING EQUIVALENT PROTECTION SHALL BE AVAILABLE

The following cargoes categorized into Group B of the IMSBC Code:

ALUMINIUM NITRATE, UN 1438
AMMONIUM NITRATE, UN 1942 (with not more than 0.2% total combustible material, including any organic substance, calculated as carbon to the exclusion of any other added substance)
AMMONIUM NITRATE BASED FERTILIZER, UN 2067
AMMONIUM NITRATE BASED FERTILIZER, UN 2071
BARIUM NITRATE, UN 1446
CALCIUM NITRATE, UN 1454
LEAD NITRATE, UN 1469
MAGNESIUM NITRATE, UN 1474
POTASSIUM NITRATE, UN 1486
SODIUM NITRATE, UN 1498
SODIUM NITRATE AND POTASSIUM NITRATE, MIXTURE, UN 1499