澳門特別行政區

行 政 長 官 辦 公 室

第 324/2017 號行政長官批示

行政長官行使《澳門特別行政區基本法》第五十條賦予的職權，並根據第26/2013號行政法規《文化產業基金》第十六條第二款、第四款及第十七條第一款的規定，作出本批示。

獨一款——梁慶庭以兼職方式擔任文化產業基金行政委員會主席的職務，自二零一七年十一月七日起續期兩年。

二零一七年九月十二日

行政長官　崔世安

第 52/2017 號行政長官公告

國際海事組織海上安全委員會於二零一三年六月二十一日在第九十二屆會議上，透過第MSC.354（92）號決議通過了《國際海運固體散裝貨物規則》（《國際固散規則》）修正案，該修正案於二零一五年一月一日在國際法律秩序上生效，包括對中華人民共和國及澳門特別行政區生效；

基於此，行政長官根據第3/1999號法律《法規的公佈與格式》第六條第一款的規定，命令公佈包含上指修正案的國際海事組織海上安全委員會第MSC.354（92）號決議的中文及英文正式文本。

《國際固散規則》公佈於二零一六年五月六日第十八期《澳門特別行政區公報》第二組第二副刊。

二零一七年九月十二日發佈。

行政長官　崔世安

REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU

GABINETE DO CHEFE DO EXECUTIVO

Despacho do Chefe do Executivo n.º 324/2017

Usando da faculdade conferida pelo artigo 50.º da Lei Básica da Região Administrativa Especial de Macau e nos termos dos n.os 2 e 4 do artigo 16.º e do n.º 1 do artigo 17.º do Regulamento Administrativo n.º 26/2013 (Fundo das Indústrias Culturais), o Chefe do Executivo manda:

Único — É renovada a nomeação de Leong Heng Teng para exercer, a tempo parcial, o cargo de presidente do Conselho de Administração do Fundo das Indústrias Culturais, por um período de dois anos, a partir de 7 de Novembro de 2017.

12 de Setembro de 2017.

O Chefe do Executivo, *Chui Sai On*.

Aviso do Chefe do Executivo n.º 52/2017

Considerando que, em 21 de Junho de 2013, na sua 92.ª sessão, o Comité de Segurança Marítima da Organização Marítima Internacional, através da resolução MSC.354 (92), adoptou emendas ao Código Marítimo Internacional de Cargas Sólidas a Granel (Código IMSBC), e que tais emendas entraram em vigor na ordem jurídica internacional, incluindo a República Popular da China e a sua Região Administrativa Especial de Macau, em 1 de Janeiro de 2015;

O Chefe do Executivo manda publicar, nos termos do n.º 1 do artigo 6.º da Lei n.º 3/1999 (Publicação e formulário dos diplomas), a resolução MSC.354 (92) do Comité de Segurança Marítima da Organização Marítima Internacional, que contém as referidas emendas, nos seus textos autênticos em línguas chinesa e inglesa.

O Código IMSBC encontra-se publicado no 2.º Suplemento do *Boletim Oficial da Região Administrativa Especial de Macau* n.º 18, II Série, de 6 de Maio de 2016.

Promulgado em 12 de Setembro de 2017.

O Chefe do Executivo, *Chui Sai On*.

第MSC.354（92）號決議

（2013年6月21日通過）

《國際海運固體散裝貨物規則》（《國際固散規則》）修正案

海上安全委員會：

憶及《國際海事組織公約》關於本委員會職能的第二十八條第（二）款，

注意到本委員會以第MSC.268（85）號決議通過的《國際海運固體散裝貨物規則》（以下稱“《國際固散規則》”）已根據《1974年國際海上人命安全公約（安全公約）》（以下稱“本公約”）第VI和VII章成為強制性規則，

還注意到關於《國際固散規則》修正程序的本公約第VIII（b）條和第VI/1－1.1款，

在其第92屆會議上，**審議了**根據本公約第VIII（b）（i）條所提交並散發的《國際固散規則》修正案建議文本，

1. 根據本公約第 VIII（b）（iv）條，**通過**《國際固散規則》修正案，其文本見本決議的附件；

2. **決定**，根據本公約第VIII（b）（vi）（2）（bb）條，上述修正案將於2014年7月1日視為已被接受，除非在該日期之前，有三分之一

以上的公約締約國政府或其合計商船隊佔世界商船總噸位不少於50%的締約國政府表示反對該修正案；

3. **請**本公約締約國政府注意，根據本公約第VIII（b）（vii）（2）條，《國際固散規則》修正案在根據上述第2段被接受後，將於2015年1月1日生效；

4. **同意**本公約締約國政府可在自願的基礎上自2014年1月1日起全部或部分實施上述《國際固散規則》修正案；

5. **要求**秘書長遵照本公約第VIII（b）（v）條，將的本決議及其附件中所含修正案文本的核證無誤副本分發給本公約所有締約國政府；

6. **還要求**秘書長將本決議及其附件的副本分發給非本公約締約國的本組織會員。

附　件

《國際海運固體散裝貨物（國際固散）規則》修正案

第1節－一般規定

1.4　本規則的適用和實施

1　用下文替代1.4.2段的最後一句話

“附錄1中固體散裝貨物明細表內“描述”、“特性（除類別和組別）”、“危險性”、“應急程序”中的內容。”

1.7　定義

2　按照字母順序插入以下新定義：

“*GHS*係指由聯合國以ST/SG/AC.10/30/Rev.4號文件出版的《化學品分類及標記全球協調系統》第四修訂版。”

“*試驗和標準手冊*係指聯合國出版的《危險貨物運輸建議，試驗和標準手冊》的第五修訂版（ST/SG/AC.10/11/Rev.5/修正案1）”

“*潛在着火源*係指但不限於明火、機器廢氣、廚房用火、電源插座和沒有經過安全認證的電器。”

“*熱源*係指經加熱的船舶結構，其表面溫度可能會超過55°C。此類型的經加熱結構有蒸汽管路，加熱線圈，經加熱的燃料艙和貨艙的頂壁或側壁，機械處所的艙壁。”

3 刪除定義的數字序號，只保持字母順序。

4 在*主管當局*定義的最後插入新的一句話如下：

“主管當局須獨立於託運人運作。”

第3節－人員與船舶安全

3.6 貨物在熏蒸下運輸

5 現3.6的文本重新編號為3.6.1。

6 插入新段落3.6.2和3.6.3如下：

“3.6.2 考慮到儘管採取了預防措施，熏蒸劑仍可能會進入有人處所，當運輸中使用諸如磷化氫氣體的熏蒸劑進行熏蒸時，須對熏蒸劑的嚴重毒性給予適當考慮。特別是，如果熏蒸劑在熏蒸時從貨物處所泄漏，應謹記熏蒸劑通過管隧、管道和其他管線包括甲板上或甲板下的布線管路，或者聯通貨物處所或機艙隔間的除濕系統進入機艙的可能性。須對潛在的隱患區域給予注意，諸如污水阱、貨物管線系統和閥門。在所有情況下，對航行期間的船上通風程序，應針對諸如因通風程序和設置錯誤、關閉裝置或通風閥門設定錯誤、起居處所的空調和封閉循環通風所產生的真空而吸入熏蒸氣體的可能性，做出認真徹底的檢查。在熏蒸程序開始前，應驗證通風閥門和關閉裝置設定正確，所有連接機艙和管隧/隧道式龍骨的、以及熏蒸泄漏時進入會不安全的其他艙室的隔艙壁開口（例如門和人孔）的關閉和密封裝置均處於有效、確認關閉的狀態，並張貼有危險警告。

3.6.3 所有適當處所亦須進行氣體濃度安全檢測，這至少須包括，起居處所；機艙；船舶航行中指定使用區域；且對與航行中熏蒸的貨艙毗鄰的經常出入工作和儲存處所，例如艏樓頂部處所，在整個航行途中，須不斷進行檢測，至少每隔8小時進行一次或按熏蒸負責人的建議更頻繁地進行檢測。對於污水阱和貨物管線系統等隱患區域須着重注意。檢測數據須在航海日誌中記錄。”

第4節－評定貨物的安全適運性

4.3 試驗證書

7 用下文替代4.3.2的第一句話：

“當船舶載運精礦或其他易流態化貨物時，託運人須向船長或其代表提供經裝貨港主管當局認可的機構所簽發的經簽署的適運水分極限證書和經簽署的水分含量證書或聲明。”

8 插入新的4.3.3段如下：

“4.3.3 當載運精礦或其他易流態化貨物時，託運人須慮及本規則的規定，確定採樣、檢測和控制水分含量程序以確保貨物在船時水分含量低於適運水分極限。這些程序須經裝貨港主管機關認可，且程序的實施須經裝貨港主管機關檢查。由主管機關簽發的程序實施業經認可的證明文件須提供給船長或其代表。”

9 插入新的4.3.4段如下：

“4.3.4 如貨物從駁船裝載到船上，在按4.3.3制定程序時，託運人須納入防止駁船上的貨物遭受雨淋和進水的程序。”

將現有4.3.3和4.3.4段分別重新編號為4.3.5和4.3.6段。

10 在新的4.3.6段後面插入新的一句話如下：

“無論如何，重要的是確保所採集的樣品對貨堆的整個深度具代表性。”

4.4 採樣程序

11 插入新的4.4.3段如下：

“4.4.3 對於精礦或其他易流態化貨物，託運人須提供便利，使船舶指定的代表可以到達貨堆以便檢驗、採樣及之後檢測。”

12 將現有4.4.3、4.4.4、4.4.5和4.4.6段重新分別編號為4.4.4、4.4.5、4.4.6和4.4.7段。

13 對於重新編號的4.4.6段，用“採樣後，含水量測試試樣須立即存放在合適的氣密、非吸收性容器中，並且容器中有儘量少的自由空氣空間以盡力較少任何含水量變化，並妥善做出標記。”替代“採樣後，試樣須立即存放在合適的密封容器中，並妥善做出標記。”

14 插入新的4.4.8段如下：

“4.4.8 對於未經處理的礦石，對靜止貨堆的採樣須僅在能觸及貨堆整個深度，並可在整個深度提取時進行。”

15 在4.7分段中，將現有參照“ISO 3082：1998”改為：

“ISO 3082：2009－鐵礦－採樣和試樣準備程序。

（註：根據此項標準，不允許對船舶和貨堆進行原位採樣）。

”

16 在4.7分節中，於“ISO 3.82：2009”之後插入：

“IS1405：2010－鐵礦－採樣和試樣準備－手冊方法。

（註：此項印度標準包含對高度達到3米的貨堆的原位採樣）。

”

第7節－易流態化貨物

7.2 導致危險的條件

17 用下文替代現有的7.2.2段：

“7.2.2 當貨物由大顆粒或塊狀組成及水通過顆粒間的空隙且水壓不會增大時，流態化不會發生。”

第8節－易流態化貨物的測定程序

8.4 測定流態化可能性的補充測試程序

18 現有 8.4 分節下的段落重新編號為 8.4.1。

19 插入新的8.4.2段如下：

“8.4.2 如果試樣經過圓罐測試後仍然保持乾燥，此物質的含水量仍然可能超過適運含水量極限。”

第9節－具有化學危險性的貨物

9.2 危險性分類

9.2.3 *僅散裝時有危險的物質（MHB）*

20 在9.2.3段中，用下文替代該標題下的現有文本：

"*9.2.3.1* 概述

9.2.3.1.1 與《國際海運危險貨物規則》中規定的包裝危險貨物不同，此類物質在散裝運輸時具有化學危險性。這些物質在散裝運輸時具有相當的風險，並需要特別預防措施。

9.2.3.1.2 如果一種物質具有以下一種或多種化學危險性，此種物質須被劃歸為MHB。在有規定的檢測方法時，須對擬載運貨物的代表性試樣進行檢測。試樣須在貨堆表面以下200到360mm處、每間隔3m對貨堆的整個長度進行採集。

9.2.3.1.3 某物質也可通過與有已知危險特性的類似貨物類比，或者通過事故記錄，歸類為MHB。

9.2.3.2 *易燃固體*

9.2.3.2.1 此類物質在散裝運輸時可即燃或易燃，且不符合納入第4.1類的標準（見《國際固散規則》9.2.2.1）。

9.2.3.2.2 根據《聯合國檢測和標準手冊》第III部分第33.2.1.4.3.1中的初步篩選檢測方法對粉末、顆粒或糊狀物質進行燃燒測試時，如一次或多次燃燒測試的燃燒時間少於兩分鐘，該物質須被歸類為MHB。金屬或合金粉末如可被點燃，且反應傳播至整個樣品長度的時間為20分鐘或以下，則須歸類為MHB。檢測試樣在初步篩選測試中的長度為200mm。此方法概要見下表：

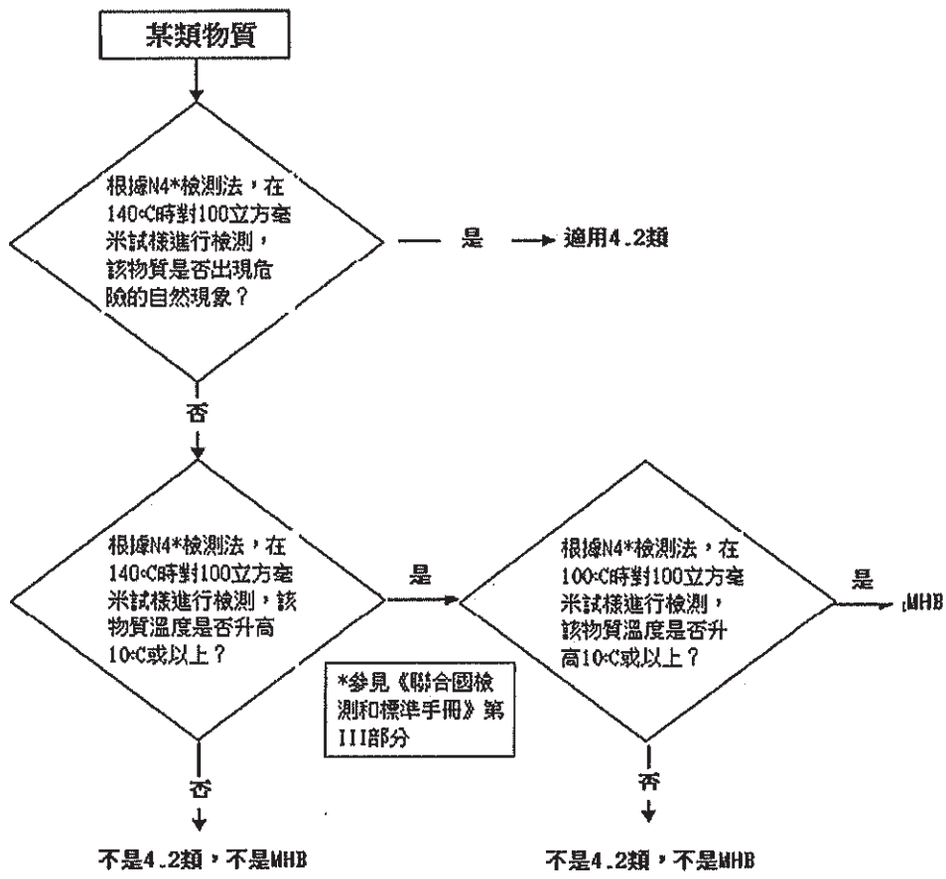
固體貨物	危險類別4.1，包裝組別III 燃燒時間，燃燒距離	MHB 燃燒時間，燃燒距離

金屬粉末	5－10 分鐘，250mm	≤20 分鐘，200mm
固體物質	＜45 秒，100mm	≤2 分鐘，200mm

9.2.3.3 自熱固體

9.2.3.3.1 此類物質在散裝運輸時自熱，且不符合納入第4.2類的標準（見9.2.2.2）。

9.2.3.3.2 根據《聯合國檢測和標準手冊》第III部分第33.3.1.6中的檢測方法，在140°C和100°C使用100mm的立方形試樣時，如試樣溫度升高超過10°C，該物質須歸類為MHB。檢測程序見下圖。



9.2.3.3.3 此外，根據《聯合國檢測和標準手冊》第III部分

第33.4.1.4.3.5中的檢測方法進行檢測的任何部分中，如觀測到溫度較環境溫度上升10°C或以上，該物質須歸類為MHB。進行此項檢測時，應在48小時期間連續測量試樣溫度。在48小時時段結束時，如溫度在升高，應按照檢測方法延長檢測時間。

9.2.3.4 *遇濕產生易燃氣體的固體*

9.2.3.4.1 此類物質在散裝運輸時，與水接觸產生易燃氣體，且不符合納入第4.3類的確立標準（見9.2.2.3）。

9.2.3.4.2 根據《聯合國檢測和標準手冊》第III部分第33.4.1中的檢測方法進行檢測時，如果易燃氣體釋放率大於零，該物質須歸為MHB。進行檢測時，須在48小時期間每小時計算一次氣體釋放率。如果在48小時時間段結束時，氣體釋放率增加，須按照檢測方法延長檢測時間。

9.2.3.5 *遇濕產生有毒氣體的固體*

9.2.3.5.1 此類物質散裝運輸時，與水接觸產生有毒氣體。

9.2.3.5.2 根據《聯合國檢測和標準手冊》第III部分第33.4.1中的檢測方法進行檢測時，如果有毒氣體釋放率大於零，該類物質須歸為MHB。根據規定，測量有毒氣體釋放率須使用測試方法中規定的測量產生易燃氣體的相同測試程序。進行檢測時，須在48小時期間每小時計算一次氣體釋放率。如果在48小時時間段結束時，氣體釋放率增加，須按照檢測方法延長檢測時間。

9.2.3.5.3 在上述檢測期間須對氣體進行收集。如果為未知

氣體，不掌握急性吸入毒性數據，須對該氣體進行化學分析和毒性檢測。如果為已知氣體，須根據所有可用信息對該氣體進行吸入毒性評估，並將檢測作為確定此危險的最終選擇。在此情況下，有毒氣體係指通過4小時的測試，顯示出急性吸入毒性（LC_{50}）值等於或低於20,000ppmV或者20mg/L的氣體。（GHS急性毒性氣體/蒸氣類別4）

9.2.3.6 有毒固體

9.2.3.6.1 此類物質在裝載、卸載或散裝運輸時，如果吸入或與皮膚接觸，對人類具有毒性危害，且不符合納入第6.1類的確立標準（見9.2.2.5）。

9.2.3.6.2 物質須按照GHS第3部分中規定的標準，歸類為MHB：

.1 經4小時檢測，貨物產生的粉塵急性吸入毒性（LC_{50}）值為1-5mg/L；（GHS急性毒性粉塵類別4）；

.2 貨物產生的粉塵吸入毒性值等於或小於1mg/L/4h（GHS特定目標器官毒性單曝露吸入粉塵1類）或低於0.02mg/L/6h/d（GHS特定目標器官毒性重複劑量吸入粉塵1類）；

.3 貨物顯示出的急性皮膚接觸毒性（LD_{50}）值為1000－2000mg/kg（GHS急性皮膚接觸類別4）；

.4 經90天檢測，貨物顯示出的皮膚接觸毒性值等

於或低於1000毫克（GHS特定目標器官毒性單曝露皮膚1類）或低於20mg/kgbw/d（GHS特定目標器官毒性重複劑量皮膚1類）；

.5 貨物呈現出致癌性（GHS類別1A和1B）、誘變性性（GHS類別1A和1B）、或生殖毒性（GHS類別1A和1B）。

9.2.3.7 *腐蝕性固體*

9.2.3.7.1 此類物質腐蝕皮膚、眼睛或金屬，或導致呼吸過敏，且不符合納入第8類的確立標準（見9.2.2.7）。

9.2.3.7.2 物質須按照GHS第3部分中規定的標準，歸類為MHB：

.1 貨物為已知的呼吸致敏物（GHS呼吸致敏1類）；

.2 貨物顯示出產生紅斑/焦痂或水腫的對皮膚刺激性的平均值等於或高於2.3，（GHS皮膚腐蝕/刺激類別2）；

.3 貨物顯示出產生角膜混濁/虹膜炎的對眼睛刺激性的平均值等於或高於1，產生結膜發紅/水腫的對眼睛刺激性的平均值等於或高於2（GHS嚴重眼損傷類別1或眼睛刺激類別2A）。

9.2.3.7.3 在55°C時，檢測該物質對鋼和鋁的表面腐蝕率，

如鋼或鋁的表面腐蝕率介於4mm和6.25mm/年之間，該物質須歸類為MHB。檢測使用的鋼須為S235JR+CR型（1.0037或St37-2），S275J2G3 CR（1.0144或St44-3），ISO 3574：199，統一編號系統（UNS）G10200或SAE 1020。檢測使用的鋁須為非鎧裝類，7075-T6或T6 AZ5GU型。《聯合國檢測和標準手冊》第III部分第37節中規定了一種可接受的檢測方法。檢測時，試樣須含至少10%質量的水分。如果擬載運貨物的試樣不含超過10%質量的水分，須向試樣中添加水分。”

附錄 1－固體散裝貨物明細表

硝酸銨 UN1942

含有不大於0.2%的可燃物質，包括以碳計算的任何有機物，但不包括任何其他添加物。

21 在積載和隔離部分，用“與熱源或火源隔離（另見**裝載**）”替代“貨物處所內不得有熱源或火源。”

22 在裝載部分，插入下文作為第一句話：

“該貨物不得裝載於毗鄰燃油艙的貨物處所中，除非燃油艙加熱裝置處於切斷狀態，且整個航程中都處於切斷狀態。”

硝酸銨基化肥 UN2067

23 將描述部分中的以下案文，移至散裝貨物運輸名稱之下：

“歸類為UN2067的硝酸銨基化肥為勻質混合物，其中硝酸銨為其主要成分，其成分限度如下：

.1 含硝酸銨不少於90%，且含不超過0.2%的以碳計算的可燃/有機物，及，如有，其他無機並對硝酸銨為惰性的添加物；或

.2 含硝酸銨少於90%但高於70%並含有其他無機物質，或含有超過80%但低於90%的硝酸銨與碳酸鈣和/或白雲岩和/或礦物硫酸鈣以及以碳計算不超過0.4%的總可燃/有機物質的混合物；或

.3 硝酸銨基化肥包含硝酸銨和硫酸銨的混合物，含有超過45%但低於70%的硝酸銨，和不超過0.4%的以碳計算的總可燃有機物，從而使硝酸銨和硫酸銨成分的百分比之和超過70%。”

24 在積載和隔離部分，案文“不得緊鄰任何含有加熱至50°C以上燃油的液貨艙和雙層底艙或管道積載”用下文替代：

“除非有監控溫度使其不超過50°C的裝置，否則不得緊鄰任何含有加熱燃油的液貨艙、雙層底艙或管道積載。”

硝酸銨基化肥 UN2071

25 將描述部分中的以下案文，移至散裝貨物運輸名稱之下：

“歸類為UN2071的硝酸銨基化肥為勻質硝酸銨基化肥混合物，包含氮、磷酸鹽或鉀鹼，含有不超過70%的硝酸銨和以碳計算不超過0.4%的總可燃有機物質，或含有不超過45%的硝酸銨和不限數量的可燃物質。在這些成分限度內的化肥，如果通過試驗槽試驗表明不易自續分解，則不受本明細表的約束。”

26 在積載和隔離部分，案文“不得緊鄰任何含有加熱至50°C以上燃油的液貨艙和雙層底艙或管道積載”用下文替代：

“除非有監控溫度使其不超過50°C的裝置，否則不得緊鄰任何含有加熱燃油的液貨艙、雙層底艙或管道積載。”

硝酸銨基化肥（無危險的）

27 將描述部分中以下案文，移至散裝貨物運輸名稱之下：

"在本明細表中所述條件下運輸的硝酸銨基化肥為勻質混合物，硝酸銨為其主要成分，其成分限度如下：

.1 含有不超過70%的硝酸銨及其他無機物質；

.2 含有不超過80%的硝酸銨與碳酸鈣和/或白雲岩和/或礦物硫酸鈣混合物，和不超過0.4%的以碳計算的可燃有機物質總量；

.3 氮類硝酸銨基化肥含硝酸銨和硫酸銨混合物，硝酸銨不超過45%，以碳計算的可燃有機物質總量不超過0.4%；及

.4 氮、磷酸鹽或鉀鹼的勻質硝酸銨基化肥混合物，硝酸銨不超過70%，以碳計算的可燃有機物質總量不超過0.4%，或硝酸銨不超過45%和不限量的可燃物質。在這些成分限度內的化肥，如果通過試驗槽試驗*表明易於自續分解或按質量計硝酸鹽含量大於10%，則不受本明細表的約束。"

28 在積載和隔離部分，案文"不得緊鄰任何含有加熱至50°C以上燃油的液貨艙和雙層底艙或管道積載"用下文替代：

"除非有監控溫度使其不超過50°C的裝置，否則不得緊鄰任何含有加熱燃油的液貨艙、雙層底艙或管道積載。"

硝酸鈣 UN1454

29 將描述部分中的以下案文，移至散裝貨物運輸名稱之下：

"本規則的規定不適用於主要由複鹽（硝酸鈣和硝酸銨）

組成並且含不超過10%的硝酸銨和至少12%結晶水的商品級硝酸鈣化肥。”

硝酸鈣化肥

30 在散裝貨物運輸名稱下面插入下文：

“本明細表的規定須僅適用於總含氮量不超過15.5%，且含水量不低於12%的貨物。”

31 刪除描述部分的下文：

“總含氮量不超過15.5%，含水量至少12%。”

木炭

32 將危險性部分中所含下文，移至裝載部分的末尾：

“超過55°C的熱木炭篩屑不得裝船。”

黑色金屬鑽、刨、旋或切屑 UN2793

33 將描述部分中的以下案文，移至散裝貨物運輸名稱之下：

“本明細表將不適用於裝貨前託運人提交證明，說明散裝運輸時無自熱性質的貨物。”

硫化金屬精礦

34 將危險性部分中所含下文，移至裝載部分的末尾：

“如果認為硫化金屬精礦具有低火災危險，在沒有安裝固定式氣體滅火系統的船舶上運輸此類貨物須按照《安全公約公約》第II－2/10.7.1.4條的規定得到主管機關的認可。”

泥炭苔

35 將危險性部分中所含下文，移至裝載部分的末尾：

“按重量計含水量超過80%的泥炭苔須僅在裝有特殊設備或專門建造的船舶上運輸（見本規則7.3.2段）。”

砂

36 將下文插入散裝貨物運輸名稱之下：

“本明細表中包括的砂係指：

鑄造砂　　硅砂

鉀長石砂　　鈉長石砂”

石英砂

37 刪除描述部分的下文

“本明細表的砂包括：

鑄造砂　　硅砂

鉀長石砂　　鈉長石砂”

石英砂

種子餅

含植物油UN1386（b）溶劑萃取物和經機械壓榨的種子，含油不超過10%；及含水量高於10%時，油和水合計含量不超過20%。

38 在散裝貨物運輸名稱下面插入下文：

“本明細表的規定不適用於：

.1 經溶劑萃取的油菜籽粕、黃豆粕、棉花籽粕和葵花籽

粕，含油不超過4%，油和水合計含量不超過15%，並基本不含易燃溶劑；

.2 機械壓榨的檸檬粕顆粒，含油不超過2.5%，油和水合計含量不超過14%；

.3 機械壓榨的玉米蛋白粉，含油不超過11.0%，油和水合計含量不超過23.6%；

.4 機械壓榨的玉米蛋白飼料顆粒，含油不超過5.20%，油和水合計含量不超過17.8%；和

.5 機械壓榨的甜菜漿顆粒，含油不超過2.8%，油和水合計含量不超過15.0%。

在裝貨前，託運人須提交由經裝運國主管當局認可的人員簽發的證書，證明免除條件已得到滿足。”

39 刪除描述部分的下文：

“本條目的規定不適用於含油量低於4%和油和水分含量合計低於15%並基本不含易燃溶劑的經溶劑萃取的油菜籽餅、顆粒、大豆粕、棉籽粕和向日葵籽粕。本明細表的規定同樣不適用於含油量低於2.5%和油和水合計含量低於14%的經機械壓榨的檸檬粕顆粒。在裝載前，託運人應提交由經裝運國主管當局認可的人員簽發的證書，證明免除條件已得到滿足。”

種子餅（無危險性的）

40 在散裝貨物運輸名稱下插入下文：

"本明細表的規定須僅適用於：

.1 經溶劑萃取的油菜籽粕、黃豆粕、棉花籽粕和葵花籽粕，含油不超過4%，油和水合計含量不超過15%，並基本不含易燃溶劑；

.2 機械壓榨的檸檬粕顆粒，含油不超過2.5%，油和水合計含量不超過14%；

.3 機械壓榨的玉米蛋白粉，含油不超過11.0%，油和水合計含量不超過23.6%；

.4 機械壓榨的玉米穀蛋白飼料顆粒，含油不超過5.20%，油和水合計含量不超過17.8%；和

.5 機械壓榨的甜菜漿顆粒，含油不超過2.8%，油和水合計含量不超過15.0%。

41 刪除描述部分的下文：

"本條目的規定不適用於含油量不超過4%的和油水含量合計不超過15%且基本不含可燃溶劑的經溶劑萃取的油菜籽粕顆粒、大豆粕、棉花籽粕和向日葵籽粕。本明細表的規定同樣不適用於含油量低於2.5%和油和水份含量合計低於14%的經機械壓榨的檸檬粕顆粒。"

將描述部分的以下案文移至裝載部分的末尾：

"裝載前，託運人須提交由經裝運國主管當局認可的人員簽發的證書，證明種子餅UN1386（b）或種子餅UN2217明細表中的免除條件已經得到滿足。"

硅錳合金（低碳的）

具有已知危險性或已知會產生氣體，含硅量25%或以上

42 從散裝貨物運輸名稱中刪除“**具有已知危險性或已知會產生有害氣體含硅量25%或以上**”。

43 用下文替代描述部分的文字：

“一種主要由錳和硅構成的合金，主要在煉鋼過程中用作脫氧劑和合金元素。黑褐色的顆粒或塊狀，銀白色金屬。”

44 用下表替代特性表：

“

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	3000至3300	0.30至0.33
尺寸	類別	組別
10mm至150mm	MHB	B

”

45 用下文替代危險性部分的原文：

“該貨物不易燃，具有低火災風險，但遇水會產生氫氣一種可燃氣體，會與空氣形成爆炸性混合物，並會在類似情況下產生劇毒氣體磷化氫和胂。該貨物會降低貨物處所中的氧氣含量，可導致長期的健康影響。”

46 刪除注意事項部分中的下文：

“須嚴禁在危險區域內吸煙，並須張貼“**禁止吸煙**”的明顯標誌。電器設備和電纜須處於良好狀態，並有妥善的保護，

避免短路和產生電火花。如果要求艙壁適於用作隔離目的，則穿過甲板和艙壁的電纜及導管處須作密封處理，防止有害氣體和蒸氣通過。裝載和卸貨期間，須關閉或篩網屏蔽通風系統，及將空調系統（如裝有）調至內循環模式，以盡力減少粉塵進入起居處所或船舶的其他內部處所。須採取措施盡力減少粉塵可與甲板機械可移動部分及外部航行設備（例如航行燈）接觸的程度。”

硫磺（加工成形的，固體的）

47 將描述部分所含以下案文移至散裝貨物運輸名稱之下：

“本明細表將不適用於經粉碎的，塊狀和粗顆粒狀硫磺（見**硫磺 UN1350**），或**未**經上述成型加工過程的酸氣加工或石油精煉作業的副產品。”

48 按照字母順序相應插入下列新的明細表：

“**氫氧化鋁**

描述

氫氧化鋁是細小的、潮濕的、白色（淺色）無味粉末。不溶於水和有機液體。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	500至1500	0.67至2.0
尺寸	類別	組別
精細粉末	MHB	A和B

危險性

如含水量超過適運水分極限，此貨物可能會流態化。見本規則第7節和第8節。氫氧化鋁粉末具有強磨蝕性和穿透性。對眼睛、皮膚和粘膜具有刺激性。該貨物不易燃或具有低火災風險。

積載和隔離

與氧化物隔離。

貨艙清潔度

按照貨物的危險性保持清潔和乾燥。

天氣注意事項

如貨物不是在符合本規則7.3.2要求的專門建造或配備的船舶中運輸，須遵守以下規定：

.1 裝載作業和航行期間須將貨物的含水量保持在適運水分極限以下；

.2 除非本明細表中另有明文規定，此貨物不得在降水期間裝卸；

.3 除非本明細表中另有明文規定，在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋；

.4 在本規則4.3.3分節所要求的程序中闡述的條件下，貨

物可在降水期間裝卸；

.5 如貨物處所中的全部貨物將在港中卸完，則可在降水期間卸下該貨物處所中的貨物。

裝載

按照本規則第4和5節中的有關規定進行平艙。

注意事項

艙底污水阱須保持清潔、乾燥並酌情遮蓋以防止貨物進入。測試裝載該貨物的貨物處所的污水系統，以確保其工作正常。須採取適當預防措施防止該貨物的粉塵進入機器處所和起居處所。須適當考慮設備的貨物粉塵保護。可能接觸該貨物粉塵的人員須佩戴護目鏡或其他等效的眼睛防塵保護用品和防塵口罩。接觸人員須穿戴防護服。

通風

沒有特別要求。

載運

航行期間，須定期檢查貨物表面的情況。若在航行期間觀察到貨物上面有自由液面或流態貨物，船長須採取適當措施以防止貨物移動和船舶的傾覆危險，並考慮尋求緊急進入避難地。

卸貨

沒有特別要求。

清掃

卸貨後，不能使用艙底泵泵出洗艙水。如果需要，須使用便攜泵清空貨物處所的水。

應急程序

配備專用應急設備 防護服（手套、靴子、工作服、安全帽） 自給式呼吸器。
應急程序 穿戴防護服及佩戴自給式呼吸器 **火災時的緊急行動** 無（不可燃） **醫療急救** 參見經修正的《危險貨物事故醫療急救指南（MFAG）》。

”

“鋁熔煉/再熔副產品，經處理的

本明細表的規定不適用於鋁熔煉副產品或鋁再熔煉副產品UN3170。

描述

用水或/和鹼溶液處理鋁熔煉/再熔的副產品以減弱其與水的反應而得到的產品。潮濕的粉末，有輕微的氨氣味。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
不適用	1080至1750	0.57至0.93
尺寸	類別	組別
少於1mm	MHB	A和B

危險性

該貨物會產生少量氫氣和氨氣。氫氣是一種易燃氣體，與空氣混合會形成爆炸性混合物。氨氣為一種劇毒氣體。該貨物的水分含量如果超過適運水分極限（TML）可能會流態化。見本規則第7節和第8節。對眼睛有腐蝕性。

積載和隔離

與食品和所有第8類液體隔離。按照第4.3類物質隔離。

貨艙清潔程度

按照貨物的危險性保持清潔和乾燥狀態。

天氣注意事項

該貨物須儘可能保持乾燥，在裝載和航行期間水分含量須低於適運水分極限。該貨物不得在降水期間裝卸。在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋。

裝載

按照本規則第4和5節中的有關規定進行平艙。

注意事項

可能接觸該貨物的人員須穿戴個人防護設備，包括護目鏡和/或必須的皮膚防護設備。在裝貨前，生產商或託運人須提供風化證書，證明該物質在生產之後曾以擬載運的顆粒尺寸，在有遮蓋但暴露於空氣中的條件下，在裝船前存放不少於4周。當船舶停靠在碼頭且裝有該貨物的貨艙口關閉時，如果天氣允許，須保持連續機械通風。在該貨物裝卸期間，須在甲板上和貨物處所附近區域張貼“禁止吸煙”標誌，並在這些處所禁止明火。貨物處所和機艙之間的艙壁須保持氣密。須避免通過機器處所的錯誤泵排。艙底污水阱須保持清潔、乾燥並酌情遮蓋以防止貨物進入。

通風

航行期間須為載運該貨物的貨物處所持續進行機械通風。如果保持通風會威脅到船舶或貨物，可以中斷通風，除非中斷通風會導致爆炸或其他危險。無論任何情況，卸貨前均須在一段合理時間內保持通風。通風的佈置須儘量減少排出氣體進入甲板上或下面的起居艙室。

載運

為測量氫氣、氨氣和乙炔的含量，在載運該貨物期間須在船上裝有每種氣體或混合氣體的探測器。此種探測器須經認證，為可在可爆氣體中安全使用的類型。航行期間須定期測量載運該貨物的處所中這些氣體的濃度，測量結果須予以記錄並在船上保存。航行期間須定期檢查貨物表面的情況。若

在航行期間觀察到貨物上面有自由液面或流態貨物，船長須採取適當措施以防止貨物移動和船舶傾覆危險，並考慮尋求緊急進入避難地。載運該貨物的貨艙艙口須為風雨密，以防止進水。

卸貨

沒有特別要求。

清掃

可能接觸該貨物的人員須穿戴個人防護設備，包括護目鏡和/或必須的皮膚防護設備。卸貨後，須對貨艙艙底污水阱和泄水孔進行檢查，並清除任何堵塞。

用水清潔貨物處所前，應清掃貨物處所，儘實際可能地清除貨物殘餘。

應急程序

配備專用應急設備 無
應急程序 無 火災時的緊急行動 封艙並使用二氧化碳，如果裝有。 醫療急救 參見經修正的《危險貨物事故醫療急救指南（MFAG）》

”

“熟料粉煤灰，濕的

描述

燃煤發電站排放的粉煤灰。灰色，可能介於近白和近黑色之間，從鍋爐底部收集的無氣味的物質，類似於砂子。水分含量介於約15%至23%。不溶於水。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
不適用	600至1700	0.6至1.7
尺寸	類別	組別
最大90mm	MHB	A和B

危險性

該貨物的水分含量如果超過適運水分極限（TML）可能會流態化。見本規則第7節和第8節。該貨物不可燃或具有低火災風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

該貨物在裝載前、裝載期間和航行期間須儘可能保持乾燥。如果貨物不是在專門建造或配備符合本規則7.3.2要求的船舶

中運輸，須遵守以下規定：

.1 航行期間須將貨物的含水量保持在適運水分極限以下；

.2 除本明細表中另有明文規定，不得在降水期間裝卸；

.3 除本明細表中另有明文規定，貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋；

.4 在本規則4.3.3節中要求的程序所規定的條件下，可在降水期間裝卸；

.5 如果貨物處所內的全部貨物將在一港口中卸完，可以在降水期間卸下該貨物處所中的貨物。

裝載

按照本規則第4和5節中的有關規定進行平艙。

注意事項

可能接觸該貨物粉塵的人員須佩戴手套，護目鏡或其他等效的眼睛防塵保護用品和防塵過濾口罩。

通風

沒有特別要求。

載運

沒有特別要求。

卸貨

沒有特別要求。

清掃

沒有特別要求。

應急程序

配備專用應急設備 防護服（護目鏡，防塵過濾口罩，手套，連體衣）。
應急程序 穿戴防護服 **火災時的緊急行動** 無（不可燃） **醫療急救** 參見經修正的《危險貨物事故醫療急救指南（MFAG）》

"

"煤焦油瀝青

描述

煤焦油蒸餾粗渣，生產焦炭的副產品。主要由多種多環芳烴組成。環境溫度下呈現黑色固體。不溶於水。生產電極和包裹冶金焦炭的瀝青覆蓋物的原料。水分含量可達6%。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	600至1100	0.9至1.7

尺寸	類別	組別
達100mm 0-10%為細顆粒：小於1mm	MHB	B

危險性

該貨物不可燃或具有低火災風險。受熱時，該貨物融化變為易燃液體。軟化溫度70°C－120°C。對眼睛有腐蝕性。會造成長期健康影響。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4和5節中的有關規定進行平艙。

注意事項

可能接觸該貨物的人員須佩戴保護性手套、防塵口罩、防護服和護目鏡。

通風

沒有特別要求。

載運

沒有特別要求。

卸貨

沒有特別要求。

清掃

沒有特別要求。

應急程序

配備專用應急設備 防護服（手套，鞋子，連體衣，帽子，防塵口罩和護目鏡）。
應急程序 穿戴防護服，保護性手套，口罩和護目鏡 火災時的緊急行動 封艙：使用船舶的固定滅火裝置（如安裝）。 排除空氣可能足以控制火情。 醫療急救 參見經修正的《危險貨物事故醫療急救指南（MFAG）》。

”

"鐵、鋼粗渣及其混合物

描述

鋼鐵廠產生的粗渣和混有以下一種或多種物質的粗渣：混凝土碎片，飛灰，耐火磚，鐵/鋼生產過程中收集的粉末，耐火材料碎片和冶鐵原料精粉。

該貨物包括由鐵和鋼渣與一種或幾種添加劑組合構成的塊狀物：水泥，碾碎的高爐渣顆粒和飛灰，及其殘渣，以及其與鐵和鋼渣的混合物。

顏色呈灰白色到暗灰色，外觀介於顆粒狀，卵石狀與塊狀之間。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	1200至3000	0.33至0.83
尺寸	類別	組別
90－100%塊狀：達300mm 0－10%細顆粒：小於1mm	不適用	C

危險性

沒有特別要求。

該貨物不可燃或具有低火災風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4和5節中的有關規定進行平艙。

當貨物的積載因數等於或小於0.56m^3/t時，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

可能接觸該貨物粉塵的人員須佩戴必要的護目鏡或其他等效的眼睛防塵保護用品和防塵過濾口罩。

通風

沒有特別要求。

載運

沒有特別要求。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“**粉碎碳陽極**

描述

粉碎碳陽極是為能夠裝運回收而粉碎成小塊的廢碳陽極。碳陽極用來將電能導入鋁熔煉槽。此貨物主要由含有碳和其他雜質的黑色粉碎塊狀物和碎片組成。無味。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	800至1000	1.00至1.25
尺寸	類別	組別
主要為達60cm的粗塊	不適用	C

危險性

該貨物可能會產生粉塵。該貨物不可燃或具有低火災風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4和5節中的有關規定進行平艙。

注意事項

可能接觸該貨物粉塵的人員須穿用必要的防護服，護目鏡或其他等效的眼睛防塵保護用品，防塵過濾口罩和防護霜。

通風

沒有特別要求。

載運

沒有特別要求。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“穀物篩選顆粒

本明細表的規定須僅適用於含油量不超過6.2%，油和水合計含量不超過17.5%的穀物篩選顆粒。

描述

穀物篩選顆粒是動物飼料產品，來自穀物中分離出的殘次物的顆粒狀動物飼料。篩屑指的是從穀物中分離出的不符合任何穀物等級的殘次物。根據殘次物的品質，篩屑為不同等級的親本穀物、自生穀物、破損或萎縮穀粒、穀殼、草籽、穀糠、粉末和其他植物物質。顏色介於褐色與黃色之間。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
小於30°	478至719	1.39至2.09
尺寸	**類別**	**組別**
長度：12至38mm 直徑：4至7mm	不適用	C

危險性

該貨物像穀物一樣自由流動。該貨物不可燃或具有低火災風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

該貨物須儘可能保持乾燥。該貨物不得在降水期間裝卸。在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋。

裝載

按照託運人提供的靜止角按照本規則第4、5和6節中的有關規定進行平艙。

在裝貨前，託運人需要提供由經裝貨國主管機關認可的人員簽發的證書，證明該貨物的含油量和含水量符合明細表中的規定。

注意事項

可能接觸該貨物粉塵的人員須穿戴必要的防塵過濾口罩，護目鏡和防護服。

載運

貨物處所的艙門須保持風雨密防止水進入。

卸貨

沒有特別要求。

通風

沒有特別要求。

清掃

沒有特別要求。

應急程序

沒有特別要求。”

“粒狀鎳銹（含水量小於2%）

描述

粗糙的深灰色鎳產品，成分為約55%鎳、20%銅和25%其他礦物雜質。無味。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
不適用	2800至4000	0.25至0.36
尺寸	類別	組別
最大3mm	MHB	B

危險性

與皮膚接觸可能會引起刺激。

該貨物為不可燃或具有低失火風險。

該貨物具有中度吸入毒性。

積載和隔離

與食品隔離。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4和5節中的有關規定進行平艙。由於貨物密度極高，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

可能接觸到貨物的粉塵成分的人員須穿用必要的個人防護裝備，包括護目鏡或其他等效的防塵護眼，呼吸防護，和/或皮膚防護。須留意防止粉塵進入生活區和封閉的工作區域。禁止在貨物處理區用餐、飲水。應採取適當的預防措施，以保護機器和起居處所免受粉塵侵襲。

載運

沒有特別要求。

卸貨

沒有特別要求。

通風

沒有特別要求。

清掃

沒有特別要求。

應急程序

配備專用應急設備
防護服（手套，鞋子，連體衣）
自給式呼吸器
應急程序
穿戴防護服和自給式呼吸器
火災時的緊急行動
無（不可燃）
醫療急救
參見經修正的《危險貨物事故醫療急救指南（MFAG）》。

”

“石膏顆粒

描述

由水合硫酸鈣製成，水合硫酸鈣由人工合成或者是工業副產品。石膏顆粒通過對水合硫酸鈣進行粒化並加工成直徑10mm或以上的顆粒而產生。不溶於水。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	310至1200	0.83至3.23
尺寸	類別	組別
超過10mm	不適用	C

危險性

沒有特別的危險性。

該貨物為非易燃或具有低失火風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4、5節中的有關規定進行平艙。

注意事項

沒有特別要求。

通風

沒有特別要求。

載運

沒有特別要求。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“鈦鐵礦（石）

描述

鈦鐵礦（石）是礦山爆破後經粉碎產生。黑色。可在電弧爐中熔煉，亦可在高爐中使用。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
不適用	2400至3200	0.31至0.42
尺寸	類別	組別
達到100mm	不適用	C

危險性

沒有特別的危險性。

該貨物不燃或具有低失火風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4、5節中的有關規定進行平艙。由於貨物密度極高，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

防止吸入粉塵。可能接觸貨物粉塵的人員須穿着必要的粉塵過濾口罩，防護眼鏡和防護服。

載運

沒有特別要求。

卸貨

沒有特別要求。

通風

沒有特別要求。

清掃

沒有特別要求。”

“鈦鐵礦（富集）

描述

鈦鐵礦（富集）由鈦鐵礦石或礦砂在電弧爐中熔煉製成。顆粒狀。根據純化程度不同，顏色介於黑色（普通級）與棕橙色之間。

又稱為鈦渣，鈦精礦，氯化渣，硫酸鹽渣，高等級硫酸鹽渣，爐渣粉，鈦鐵電熱熔渣或二氧化鈦渣。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
不適用	1860至2400	0.41至0.54
尺寸	類別	組別
達12mm	不適用	A

危險性

該貨物在載運期間如果水分含量超過適運水分極限可能會流態化。見本規則第7和第8節。

該貨物不燃或具有低失火風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

該貨物在裝載前、裝載期間和航行期間須儘可能保持乾燥。如果貨物不是在符合本規則7.3.2要求的專門建造或配備的船舶中運輸，須遵守以下規定：

.1 航行期間須將貨物的含水量保持在適運水分極限以

下；

.2 除本明細表中另有明文規定，不得在降水期間裝卸；

.3 除本明細表中另有明文規定，在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋；

.4 在本規則4.3.3節中要求的程序所規定的條件下，可在降水期間裝卸；

.5 如果貨物處所內全部貨物將在一港口中卸完，可以在降水期間卸下該貨物處所中的貨物。

裝載

按照本規則第4、5節中的有關規定進行平艙。由於貨物密度極高，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

艙底污水阱須保持清潔、乾燥並酌情遮蓋以防止貨物進入。可能接觸該貨物粉塵成分的人員須佩戴必要的個人防護設備，包括護目鏡或其他等效的眼睛防塵保護和呼吸保護。在用餐，飲水和吸煙前需要洗手和洗臉。

通風

沒有特別要求。

載運

在航行期間，須定期檢查貨物表面的情況。若在航行期間觀察到貨物上面有自由液面或流態貨物，船長須採取適當措施以防止貨物移動和船舶傾覆危險，並考慮尋求緊急進入避難地。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“**鎳礦**

描述

多種顏色。不同種類的鎳礦顆粒大小和水分含量不同。有些可能含有粘土狀礦石。對於精礦，見**鎳精礦**。

特性

靜止角	**散貨密度（kg/m³）**	**積載因數（m³/t）**
不適用	1400至1800	0.55至0.71
尺寸	**類別**	**組別**
多種多樣	不適用	A

危險性

該貨物在載運期間如果水分含量超過適運水分極限可能

會流態化。見本規則第7和第8節。

該貨物不燃或具有低失火風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

貨艙必須清潔乾燥。

天氣注意事項

如果貨物不是在符合本規則7.3.2要求的專門建造或配備的船舶中運輸，須遵守以下規定：

.1 航行期間須將貨物的含水量保持在適運水分極限以下；

.2 除本明細表中另有明文規定，不得在降水期間裝卸；

.3 除本明細表中另有明文規定，在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋；

.4 在本規則4.3.3節中要求的程序所規定的條件下，可在降水期間裝卸；

.5 如果貨物處所內全部貨物將在一港口中卸完，可以在降水期間卸下該貨物處所中的貨物。

裝載

按照本規則第4、5節中的有關規定進行平艙。當貨物的積載因數等於或小於0.56m^3/t時，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

艙底污水阱須保持清潔、乾燥並酌情遮蓋以防止貨物進入。測試裝載該貨物的貨物處所的污水系統，以確保其工作正常。

通風

裝載該貨物的貨物處所在航次期間不得進行通風。

載運

在航行期間，須定期檢查貨物表面的情況。若在航行期間觀察到貨物上面有自由液面或流態貨物，船長須採取適當措施以防止貨物移動和船舶傾覆危險，並考慮尋求緊急進入避難地。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“砂，重礦物

描述

通常是兩種或多種重礦物砂的混合物。此類砂特點為散貨密度重、顆粒尺寸相對細小。

粗糙。可能有粉塵。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	2380至3225	0.31至0.42
尺寸	類別	組別
達到5mm	不適用	A

危險性

該貨物在載運期間如果水分含量超過適運水分極限可能會流態化。見本規則第7和第8節。

該貨物不燃或具有低失火風險。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

如果貨物不是在符合本規則7.3.2要求的專門建造或配備的船舶中運輸，須遵守以下規定：

.1 航行期間須將貨物的含水量保持在適運水分極限以下；

.2 除本明細表中另有明文規定，不得在降水期間裝卸；

.3 除本明細表中另有明文規定，在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋；

.4 在本規則4.3.3節中要求的程序所規定的條件下，可在降水期間裝卸；

.5 如果貨物處所內全部貨物將在一港口中卸完，可以在降水期間卸下貨物處所中的貨物。

裝載

按照本規則第4、5節中的有關規定進行平艙。由於貨物密度極高，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

艙底污水阱須保持清潔、乾燥並酌情遮蓋以防止貨物進入。

通風

沒有特別要求。

載運

在航行期間，須定期檢查貨物表面的情況。若在航行期間觀察到貨物上面有自由液面或流態貨物，船長須採取適當措

施以防止貨物移動和船舶傾覆危險，並考慮尋求緊急進入避難地。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“**硅渣**

描述

硅渣是無味、淺灰色類金屬物質，主要為塊狀，由不同比例的硅和硅氧化物組成。

特性

靜止角	散貨密度（kg/m^3）	積載因數（m^3/t）
不適用	2300至3000	0.33至0.43
尺寸	類別	組別
達到150mm	不適用	C

危險性

粉塵會對眼部、皮膚和上呼吸道產生刺激。

該貨物不燃或具有低失火風險。

積載和隔離

與酸性和鹼性物質“隔離”。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

按照本規則第4、5節中的有關規定進行平艙。由於貨物密度極高，除非貨物在內底均勻鋪開以使重量平均分佈，否則內底可能會受力過度。須給予適當考慮，確保在航行和裝卸期間，內底不致因貨物堆積而受力過度。

注意事項

可能接觸該貨物粉塵的人員須穿用必要的防護服，護目鏡或其他等效的眼睛防塵保護用品和防塵過濾口罩。

通風

沒有特別要求。

載運

沒有特別要求。

卸貨

沒有特別要求。

清掃

沒有特別要求。”

“來自回收紙和塑料的固化燃料

本明細表不適用於歸類為危險品（第4.2類）的物質。

描述

固化燃料，將紙張和塑料壓縮或擠壓至模具製成。主要原料是廢紙和塑料。水分含量等於或小於5%。灰分含量等於或小於10%。總氯含量等於或小於0.3%。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
不適用	400至500	2.0至2.5
尺寸	**類別**	**組別**
長度：30－100mm 直徑：15－30mm	MHB	B

危險性

200°C以下不易自燃。點燃時，燃燒猛烈。熔化時，產生易燃和有毒氣體。可能會自熱，並可能會耗盡貨物處所內的氧氣。

積載和隔離

沒有特別要求。

貨艙清潔程度

沒有特別要求。

天氣注意事項

沒有特別要求。

裝載

裝貨前，生產商或者託運人需要向船方出具證書證明該貨物不是第4.2類。按照本規則第4、5節中的有關規定進行平艙。

注意事項

在裝卸和運輸過程中，在裝載該貨物的貨艙附近不得允許熱工、燃燒和抽煙。貨物卸載後，在貨艙充分通風之前，不得允許進入。

通風

航行期間貨物處所的艙蓋須關閉並不得進行通風。

載運

航行期間不得進入貨物處所。

卸貨

進入貨物處所前，艙蓋須打開並進行充分的通風。

清掃

沒有特別要求。

應急程序

配備專用應急設備

防護服（防護眼鏡，隔熱手套，連體衣）。
應急程序 穿戴防護服。 **火災時的緊急行動** 封艙；使用船舶的固定滅火設備（如安裝）。 使用水、泡沫或者化學乾粉滅火。 **醫療急救** 參見經修正的《危險貨物事故醫療急救指南（MFAG）》。

”

“烘烤木材

描述

經部分燃燒或烘烤形成的顆粒或塊狀木材。巧克力棕色或黑色。可能含有高達3%的黏合劑。

特性

靜止角	散貨密度（kg/m³）	積載因數（m³/t）
35°或更小	650至800	1.25至1.54
尺寸	**類別**	**組別**
顆粒直徑6－12mm。塊狀厚度12－50mm，長和寬達75mm	MHB	B

危險性

運輸過程中會發生氧化，導致貨物處所和相鄰處所的氧氣減少，一氧化碳和二氧化碳增加。

即燃，可能自熱和自燃。

裝卸過程中可能會產生粉塵，之後裝載時有粉塵爆炸風險。粉塵可能會刺激眼睛，皮膚和呼吸道。

積載和隔離

與第4.1類物質隔離。

貨艙清潔程度

根據貨物危險性保持清潔和乾燥。

天氣注意事項

該貨物須儘可能保持乾燥。該貨物不得在降水期間裝卸。在貨物裝卸期間，須關閉裝載或擬裝載該貨物的處所的不在使用中的所有艙蓋。

裝載

按照本規則第4、5和6節中的有關規定進行平艙。

注意事項

不得允許人員進入貨物或相鄰密閉處所，直至經檢測並確定氧氣含量和一氧化碳濃度恢復到以下水平：氧氣20.7%，且一氧化碳＜100ppm。如未滿足上述條件，須對貨物或相鄰密閉處所再次通風，並須在適當時間間隔後重新檢測。進入貨物和相鄰密閉處所的所有人員須攜帶並啟動氧氣和一氧化碳監測儀器。

可能接觸該貨物粉塵的人員須穿戴必要的防護服，護目鏡

或其他等效的眼睛防塵保護用品和防塵過濾口罩。

通風

即使與貨艙相鄰的密閉處所與貨艙有明顯密封隔離，進入這些處所前仍會需要通風。

載運

貨物處所的艙門須保持風雨密防止水進入。

卸貨

沒有特別要求。

清掃

沒有特別要求。

應急程序

配備專用應急設備 應具備自給式呼吸器和混合或獨立的氧氣、一氧化碳探測儀。
應急程序 無 火災時的緊急行動 封艙；使用船舶的固定滅火設備（如安裝）。 排除空氣能有效控制火情。 使用二氧化碳，泡沫或水滅火。 醫療急救 參見經修正的《危險貨物事故醫療急救指南（MFAG）》

”

附錄3－固體散裝貨物的特性

1 非凝聚性貨物

49 在1.1段，按照字母順序插入以下新的散裝貨物運輸名稱：

“穀物篩選顆粒”

“烘烤木材”

附錄4－索引

50 收錄**水合氧化鋁**的同義詞：

“氫氧化鋁”

51 在**砂**下插入另一個名稱：

“

散裝貨物運輸名稱	組別	參考
鋰輝石	C	見砂

”

52 將散裝貨物運輸名稱中**硅錳合金**改為**“硅錳合金（低碳的）”**。

53 在字母索引中納入下列名稱：

“

散裝貨物運輸名稱	組別	參考
氫氧化鋁	A和B	

鋁熔煉/再熔副產品，經處理的	A和B	
熟料粉煤灰，濕的	A和B	
煤焦油瀝青	B	
鐵、鋼粗渣及其混合物	C	
粉碎碳陽極	C	
穀物篩選顆粒	C	
粒狀鎳銃（水分含量低於2%）	B	
顆粒石膏	C	
鈦鐵礦（石）	C	
鈦鐵礦（富集）	A	
鎳礦	A	
砂，重礦物	A	
硅渣	C	
來自回收紙和塑膠的固化燃料	B	
烘烤木材	B	

"

RESOLUTION MSC.354(92)
(Adopted on 21 June 2013)

AMENDMENTS TO THE INTERNATIONAL MARITIME SOLID BULK CARGOES (IMSBC) CODE

THE MARITIME SAFETY COMMITTEE,

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

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

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

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

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the IMSBC Code, the text of which is set out in the annex to the present resolution;

2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the said amendments shall be deemed to have been accepted on 1 July 2014, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;

3. INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2015 upon their acceptance in accordance with paragraph 2 above;

4. AGREES that Contracting Governments to the Convention may apply the aforementioned amendments in whole or in part on a voluntary basis as from 1 January 2014;

5. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the annex to all Contracting Governments to the Convention;

6. ALSO REQUESTS the Secretary-General to transmit copies of this resolution and its annex to Members of the Organization which are not Contracting Governments to the Convention.

ANNEX

AMENDMENTS TO THE INTERNATIONAL MARITIME SOLID BULK CARGOES (IMSBC) CODE

Section 1 – General provisions

1.4 Application and implementation of this Code

1 Replace the last sentence of paragraph 1.4.2 with the following:

"The texts in the sections for "Description", "Characteristics (other than CLASS and GROUP)", "Hazard" and "Emergency procedures" of individual schedules of solid bulk cargoes in appendix 1."

1.7 Definitions

2 Insert the following new definitions in alphabetical order:

"*GHS* means the fourth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals, published by the United Nations as document ST/SG/AC.10/30/Rev.4."

"*Manual of Tests and Criteria* means the fifth revised edition of the United Nations publication entitled "Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria" (ST/SG/AC.10/11/Rev.5/Amendment 1)."

"*Potential sources of ignition* means, but is not limited to, open fires, machinery exhausts, galley uptakes, electrical outlets and electrical equipment unless they are of certified safe type."

"*Sources of heat* means heated ship structures, where the surface temperature is liable to exceed 55ºC. Examples of such heated structures are steam pipes, heating coils, top or side walls of heated fuel and cargo tanks, and bulkheads of machinery spaces."

3 All numerical references to definitions are deleted, keeping them in alphabetical order only.

4 Insert a new sentence at end of definition of *Competent authority* as follows:

"The competent authority shall operate independently from the shipper."

Section 3 – Safety of personnel and ship

3.6 Cargo under in-transit fumigation

5 The existing text under 3.6 is renumbered as 3.6.1.

6 Insert new paragraphs 3.6.2 and 3.6.3 as follows:

"3.6.2 When a fumigant is used, such as phosphine gas, for fumigation-in-transit, due consideration shall be given to the severe toxicity of fumigants, taking into account that fumigants may enter into occupied spaces despite many precautions

taken. In particular, in the case that fumigant leaks from a cargo hold under fumigation, the possibility should be kept in mind that it may enter the engine-room via pipe tunnels, ducts, and piping of any kind, including wiring ducts on or below deck, or dehumidifier systems that may be connected to parts of the cargo hold or compartments of the engine-room. Attention shall be given to potential problem areas such as bilge and cargo line systems and valves. In all cases, ventilation procedures on board the ship during the voyage, should be scrutinized with regard to the possibility of drawing in the fumigant gas such as by incorrect ventilation procedures and settings, vacuum creation due to incorrect closing devices or flap settings, air conditioning and closed loop ventilation of the accommodation. Prior to commencement of fumigation procedures, it should be verified that ventilation flaps and closing devices are set correctly and that means of closing and sealing of all the bulkhead openings (such as doors and manholes) leading from the engine-room to piping tunnels/duct keels and other spaces that in case of leaks could become unsafe to enter during the fumigation are effective, confirmed closed and have warning signs posted.

3.6.3 Gas concentration safety checks shall also be made at all appropriate locations, which shall at least include: accommodation; engine-rooms; areas designated for use in navigation of the ship; and frequently visited working areas and stores, such as the forecastle head spaces, adjacent to cargo holds being subject to fumigation in transit, shall be continued throughout the voyage at least at eight-hour intervals or more frequently if so advised by the fumigator-in-charge. Special attention shall also be paid to potential problem areas such as bilge and cargo line systems. These readings shall be recorded in the ship's logbook."

Section 4 – Assessment of acceptability of consignments for safe shipment

4.3 Certificates of test

7 Replace the first sentence of paragraph 4.3.2 with the following:

"When a concentrate or other cargo which may liquefy is carried, the shipper shall provide the ship's master or his representative with a signed certificate of the TML, and a signed certificate or declaration of the moisture content, each issued by an entity recognized by the Competent Authority of the port of loading."

8 Insert new paragraph 4.3.3 as follows:

"4.3.3 When a concentrate or other cargo which may liquefy is carried, procedures for sampling, testing and controlling moisture content to ensure the moisture content is less than the TML when it is on board the ship shall be established by the shipper, taking account of the provisions of this Code. Such procedures shall be approved and their implementation checked by the competent authority of the port of loading. The document issued by the competent authority stating that the procedures have been approved shall be provided to the master or his representative."

9 Insert new paragraph 4.3.4 as follows:

"4.3.4 If the cargo is loaded on to the ship from barges, in developing the procedures under 4.3.3 the shipper shall include procedures to protect the cargo on the barges from any precipitation and water ingress."

and renumber the existing paragraphs 4.3.3 and 4.3.4 as 4.3.5 and 4.3.6, respectively.

10 A new sentence is inserted to the end of the renumbered paragraph 4.3.6 as follows:

"However, it is important to ensure that the samples taken are representative of the whole depth of the stockpile."

4.4 Sampling procedures

11 Insert new paragraph 4.4.3 as follows:

"4.4.3 For a concentrate or other cargo which may liquefy, the shipper shall facilitate access to stockpiles for the purpose of inspection, sampling and subsequent testing by the ship's nominated representative."

12 Renumber the existing paragraphs 4.4.3, 4.4.4, 4.4.5 and 4.4.6 as 4.4.4, 4.4.5, 4.4.6 and 4.4.7, respectively.

13 In the renumbered paragraph 4.4.6, replace the sentence "Samples shall be immediately placed in suitable sealed containers which are properly marked" with the sentence "Samples for moisture testing shall be immediately placed in suitable airtight, non-absorbent containers with a minimum of free air space to minimize any change in moisture content, such containers being properly marked".

14 Insert a new paragraph 4.4.8 as follows:

"4.4.8 For unprocessed mineral ores the sampling of stationary stockpiles shall be carried out only when access to the full depth of the stockpile is available and samples from the full depth of the stockpile can be extracted."

15 In subsection 4.7, the existing reference "ISO 3082:1998" is replaced with the following:

"ISO 3082:2009 – Iron ores – Sampling and sample preparation procedures.

(Note: Under this Standard the in situ sampling of ships and stockpiles is not permitted)."

16 A new reference in subsection 4.7 is inserted after "ISO 3082:2009" as follows:

"IS1405:2010 – Iron Ores – Sampling & Sample Preparation – Manual Method.

(Note: This Indian Standard covers the in situ sampling of stockpiles up to a height of 3 m)."

Section 7 – Cargoes that may liquefy

7.2 Conditions for hazards

17 The existing paragraph 7.2.2 is replaced with the following:

"7.2.2 Liquefaction does not occur when the cargo consists of large particles or lumps and water passes through the spaces between the particles and there is no increase in the water pressure."

Section 8 – Test procedures for cargoes that may liquefy

8.4 Complementary test procedure for determining the possibility of liquefaction

18 The existing paragraph under subsection 8.4 is numbered as 8.4.1.

19 Insert a new paragraph 8.4.2 as follows:

"8.4.2 If samples remain dry following a can test, the moisture content of the material may still exceed the Transportable Moisture Limit (TML)."

Section 9 – Materials possessing chemical hazards

9.2 Hazard classification

9.2.3 *Materials hazardous only in bulk (MHB)*

20 In paragraph 9.2.3, replace the existing text under the heading with the following:

"9.2.3.1 General

9.2.3.1.1 These are materials which possess chemical hazards when transported in bulk other than materials classified as packaged dangerous goods in the IMDG Code. These materials present a significant risk when carried in bulk and require special precautions.

9.2.3.1.2 A material shall be classified as MHB if the material possesses one or more of the chemical hazards as defined below. When a test method is prescribed, representative samples of the cargo to be carried shall be used for testing. Samples shall be taken 200 to 360 mm inward from the surface at 3 m intervals over the length of a stockpile.

9.2.3.1.3 A material may also be classified as MHB by analogy with similar cargoes with known hazardous properties or by records of accidents.

9.2.3.2 Combustible solids

9.2.3.2.1 These are materials which are readily combustible or easily ignitable when transported in bulk and do not meet the established criteria for inclusion in class 4.1 (see 9.2.2.1 of the IMSBC Code).

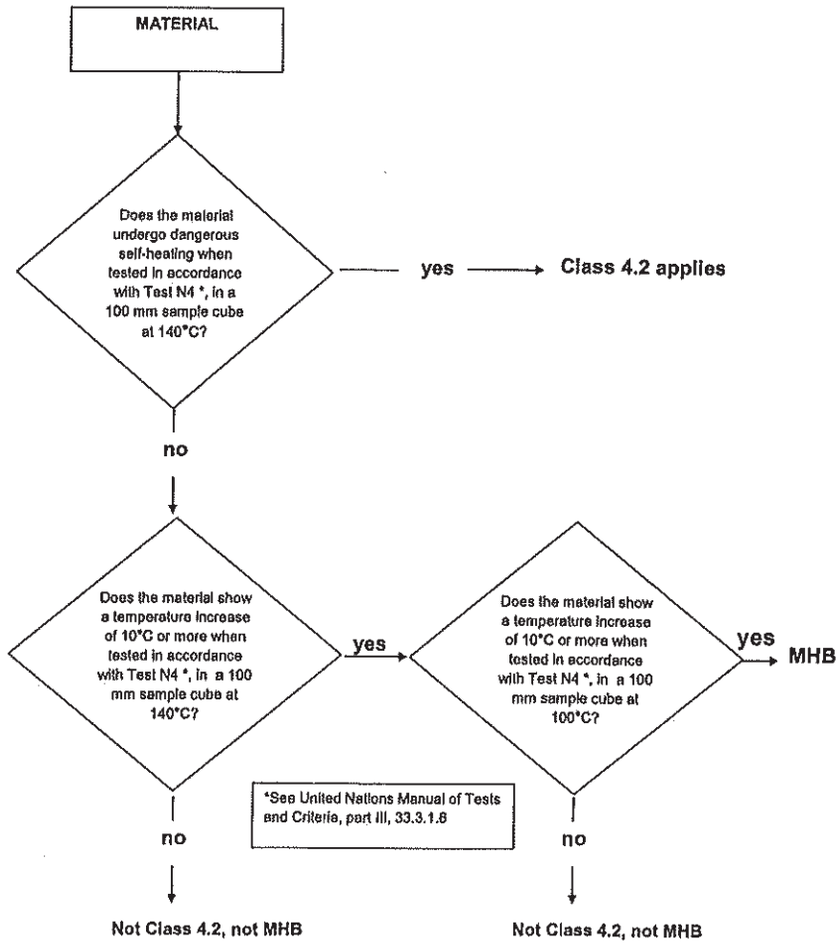
9.2.3.2.2 Powdered, granular or pasty materials shall be classified as MHB when the time of burning of one or more of the test runs, performed in accordance with the preliminary screening test method described in the United Nations Manual of Tests and Criteria, part III, 33.2.1.4.3.1, is less than 2 minutes. Powders of metals or metal alloys shall be classified as MHB when they can be ignited and the reaction spreads over the whole length of the sample in 20 minutes or less. The test sample in the preliminary screening test is 200 mm in length. A summary of this approach is presented in the table below:

Solid Cargo	Hazard Class 4.1, PG III Burn time, Burn distance	MHB Burn time, Burn distance
Powdered Metal	more than 5 minutes but not more than 10 minutes, 250 mm	≤20 minutes, 200 mm
Solid Material	<45 seconds, 100 mm	≤2 minutes, 200 mm

9.2.3.3 Self-heating solids

9.2.3.3.1 These are materials that self-heat when transported in bulk and do not meet the established criteria for inclusion in class 4.2 (see 9.2.2.2).

9.2.3.3.2 A material shall be classified as MHB if, in the tests performed in accordance with the test method given in the United Nations Manual of Tests and Criteria, part III, 33.3.1.6, the temperature of the test sample rises by more than 10°C when using a 100 mm cube sample at 140°C and at 100°C. The flow chart below illustrates the test procedure.



9.2.3.3.3 In addition, a material shall be classified as MHB if a temperature rise of 10°C or more over ambient temperature is observed during any portion of the test performed in accordance with the test method described in United Nations Manual of Tests and Criteria, part III, 33.4.1.4.3.5. When performing this test, the temperature of the sample should be measured continuously over 48 hours. If, at the end of the 48-hour period the temperature is increasing, the test period shall be extended in accordance with the test method.

9.2.3.4 Solids that evolve into flammable gas when wet

9.2.3.4.1 These are materials that emit flammable gases when in contact with water when transported in bulk and do not meet established criteria for inclusion in class 4.3 (see 9.2.2.3).

9.2.3.4.2 A material shall be classified as MHB if, in tests performed in accordance with the test method given in the United Nations Manual of Tests and Criteria, part III, 33.4.1, the flammable gas evolution rate is greater than zero. When performing this test, the rate of evolution of gas shall be calculated over 48 hours at one-hour intervals. If at the end of the 48-hour period the rate of evolution is increasing, the test period shall be extended in accordance with the test method.

9.2.3.5 Solids that evolve toxic gas when wet

9.2.3.5.1 These are materials that emit toxic gases when in contact with water when transported in bulk.

9.2.3.5.2 A material shall be classified as MHB if, in tests performed in accordance with the test method given in the United Nations Manual of Tests and Criteria, part III, 33.4.1, the toxic gas evolution rate is greater than zero. Toxic gas evolution shall be measured using the same test procedure for flammable gas evolution as prescribed in the test method. When performing this test, the rate of evolution of gas shall be calculated over 48 hours at 1-hour intervals. If at the end of the 48-hour period the rate of evolution is increasing, the test period shall be extended in accordance with the test method.

9.2.3.5.3 The gas shall be collected over the test period prescribed above. The gas shall be chemically analysed and tested for toxicity if the gas is unknown and no acute inhalation toxicity data is available. If the gas is known, inhalation toxicity shall be assessed based on all information available, using testing as a last resort option for concluding this hazard. Toxic gases in this respect are gases showing acute inhalation toxicity (LC_{50}) of or below 20,000 ppmV or 20 mg/l by 4 hours' testing (GHS Acute Toxicity Gases/Vapours Category 4).

9.2.3.6 Toxic solids

9.2.3.6.1 These are materials that have toxic hazards to humans if inhaled or with contact with skin when loaded, unloaded, or transported in bulk and do not meet the established criteria for inclusion in class 6.1 (see 9.2.2.5).

9.2.3.6.2 A material shall be classified as MHB in accordance with the criteria laid down within part 3 of the GHS:

.1 cargoes developing cargo dust with an acute inhalation toxicity (LC_{50}) of 1-5 mg/l by 4 hours testing (GHS Acute Toxicity Dusts Category 4);

.2 cargoes developing cargo dust exhibiting an inhalation toxicity of equal to or less than 1 mg/litre/4h (GHS Specific Target Organ Toxicity Single Exposure Inhalation Dust Category 1) or below 0.02 mg/litre/6h/d (GHS Specific Target Organ Toxicity Repeated Dose Inhalation Dust Category 1);

.3 cargoes exhibiting an acute dermal toxicity (LD_{50}) of 1,000-2,000 mg/kg (GHS Acute Toxicity Dermal Category 4);

.4 cargoes exhibiting a dermal toxicity of or below 1000 mg (GHS Specific Target Organ Toxicity Single Exposure Dermal Category 1) or below 20 mg/kg bw/d by 90 days testing (GHS Specific Target Organ Toxicity Repeated Dose Dermal Category 1);

.5 cargoes exhibiting carcinogenicity (GHS Category 1A and 1B), mutagenicity (GHS Category 1A and 1B) or reprotoxicity (GHS Category 1A and 1B).

9.2.3.7 Corrosive solids

9.2.3.7.1 These are materials that are corrosive to skin, eye or to metal or are respiratory sensitizers and do not meet the established criteria for inclusion in class 8 (see 9.2.2.7).

9.2.3.7.2 A material shall be classified as MHB in accordance with the criteria laid down within part 3 of the GHS:

.1 cargoes which are known to be a respiratory sensitizer (GHS Respiratory Sensitization Category 1);

.2 cargoes exhibiting skin irritation with a mean value of or higher than 2.3 for erythema/eschar or oedema (GHS Skin Corrosion/Irritation Category 2);

.3 cargoes exhibiting eye irritation with a mean value of or higher than 1 for corneal opacity/irititis or 2 for conjunctival redness/oedema (GHS Serious Eye Damage Category 1 or Eye Irritation Category 2A).

9.2.3.7.3 A material shall be classified as MHB when the corrosion rate on either steel or aluminium surfaces is between 4 mm and 6.25 mm a year at a test temperature of 55°C when tested on both materials. For the purposes of testing steel, type S235JR+CR (1.0037 resp. St 37-2), S275J2G3+CR (1.0144 resp. St 44-3), ISO 3574:199, Unified Numbering Systems (UNS) G10200 or SAE 1020, and for testing aluminium, non-clad, types 7075-T6 or AZ5GU T6 shall be used. An acceptable test is prescribed in the United Nations Manual of Tests and Criteria, part III, section 37. When this test is performed the sample shall contain at least 10% moisture by mass. If the representative sample of the cargo to be shipped does not contain more than 10% moisture by mass, water shall be added to the sample."

Appendix 1 – Individual schedules of solid bulk cargoes

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

21 In the section for Stowage and Segregation replace the sentence "There shall be no sources of heat or ignition in the cargo space." with the sentence "Separated from" sources of heat or ignition (*see also* **Loading**)."

22 In the section for Loading, insert as the first sentence the following:

"This cargo shall not be loaded in cargo spaces adjacent to fuel oil tank(s), unless heating arrangements for the tank(s) are disconnected and remain disconnected during the entire voyage."

AMMONIUM NITRATE-BASED FERTILIZER UN 2067

23 The following text, contained in the section for Description, is moved under the Bulk Cargo Shipping Name:

"Ammonium nitrate-based fertilizers classified as UN 2067 are uniform mixtures containing ammonium nitrate as the main ingredient within the following composition limits:

.1 not less than 90% ammonium nitrate with not more than 0.2% total combustible/organic material calculated as carbon and with added matter, if any, which is inorganic and inert towards ammonium nitrate; or

.2 less than 90% but more than 70% ammonium nitrate with other inorganic materials or more than 80% but less than 90% ammonium nitrate mixed with calcium carbonate and/or dolomite and/or mineral calcium sulphate and not more than 0.4% total combustible/organic material calculated as carbon; or

.3 ammonium nitrate-based fertilizers containing mixtures of ammonium nitrate and ammonium sulphate with more than 45% but less than 70% ammonium nitrate and not more than 0.4% total combustible organic material calculated as carbon such that the sum of the percentage compositions of ammonium nitrate and ammonium sulphate exceeds 70%."

24 In the section for Stowage and Segregation, the text "Not to be stowed immediately adjacent to any tank, double bottom or pipe containing fuel oil heated to more than 50°C" is replaced with the following:

"Not to be stowed immediately adjacent to any tank, double bottom or pipe containing heated fuel oil unless there are means to monitor and control the temperature so that it does not exceed 50°C."

AMMONIUM NITRATE-BASED FERTILIZER UN 2071

25 The following text, contained in the section for Description, is moved under the Bulk Cargo Shipping Name:

"Ammonium nitrate-based fertilizers classified as UN 2071 are uniform ammonium nitrate based fertilizer mixtures of the nitrogen, phosphate or potash, containing not more than 70% ammonium nitrate and not more than 0.4% total combustible organic material calculated as carbon or with not more than 45% ammonium nitrate and unrestricted combustible material. Fertilizers within these composition limits are not subject to the provisions of this schedule when shown by a trough test that they are not liable to self-sustaining decomposition."

26 In the section for Stowage and Segregation, the text "Not to be stowed immediately adjacent to any tank or double bottom containing fuel oil heated to more than 50°C" is replaced with the following:

"Not to be stowed immediately adjacent to any tank, double bottom or pipe containing heated fuel oil unless there are means to monitor and control the temperature so that it does not exceed 50°C."

AMMONIUM NITRATE-BASED FERTILIZER (non-hazardous)

27 The following text, contained in the section for Description, is moved under the Bulk Cargo Shipping Name:

"Ammonium nitrate based fertilizers transported in conditions mentioned in this schedule are uniform mixtures containing ammonium nitrate as the main ingredient within the following composition limits:

.1 not more than 70% ammonium nitrate with other inorganic materials;

.2 not more than 80% ammonium nitrate mixed with calcium carbonate and/or dolomite and/or mineral calcium sulphate and not more than 0.4% total combustible organic material calculated as carbon;

.3 nitrogen type ammonium nitrate based fertilizers containing mixtures of ammonium nitrate and ammonium sulphate with not more than 45% ammonium nitrate and not more than 0.4% total combustible organic material calculated as carbon; and

.4 uniform ammonium nitrate based fertilizer mixtures of nitrogen, phosphate or potash, containing not more than 70% ammonium nitrate and not more than 0.4% total combustible organic material calculated as carbon or with not more than 45% ammonium nitrate and unrestricted combustible material. Fertilizers within these composition limits are not subject to the provisions of this schedule when shown by a trough test that they are liable to self-sustaining decomposition or if they contain an excess of nitrate greater than 10% by mass."

28 In the section Stowage and Segregation, the text "Not to be stowed immediately adjacent to any tank, double bottom or pipe containing fuel oil heated to more than 50°C" is replaced with the following:

"Not to be stowed immediately adjacent to any tank, double bottom or pipe containing heated fuel oil unless there are means to monitor and control the temperature so that it does not exceed 50°C."

CALCIUM NITRATE UN 1454

29 The following text, contained in the section for Description, is moved under the Bulk Cargo Shipping Name:

"The provisions of this Code shall not apply to the commercial grades of calcium nitrate fertilizers consisting mainly of a double salt (calcium nitrate and ammonium nitrate) and containing not more than 10% ammonium nitrate and at least 12% water of crystallization."

CALCIUM NITRATE FERTILIZER

30 The following text is inserted under the Bulk Cargo Shipping Name:

"The provisions of this schedule shall apply only for cargoes containing not more than 15.5% total nitrogen and at least 12% water."

31 The following text is deleted from the section for Description:

"and containing not more than 15.5% total nitrogen and at least 12% water".

CHARCOAL

32 The following text, contained in the section for Hazard, is moved at the end in the section for Loading:

"Hot charcoal screenings in excess of 55°C shall not be loaded."

FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS UN 2793

33 The following text, contained in the section for Description, is moved under the Bulk Cargo Shipping Name:

"This schedule shall not apply to consignments of materials which are accompanied by a declaration submitted prior to loading by the shipper and stating that they have no self-heating properties when transported in bulk."

METAL SULPHIDE CONCENTRATES

34 The following text, contained in the section for Hazard, is moved at the end in the section for Precautions:

"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."

PEAT MOSS

35 The following text contained in the section for Hazard, is moved at the end in the section for Loading:

"Peat Moss having a moisture content of more than 80% by weight shall only be carried on specially fitted or constructed ships (see subsecion 7.3.2 of this Code)."

SAND

36 The following text is inserted under the Bulk Cargo Shipping Name:

"Sands included in this schedule are:

Foundry sand	Silica sand
Potassium felspar sand	Soda felspar sand"
Quartz sand	

37 The following text in the section for Description is deleted:

"Sands included in this schedule are:

FOUNDRY SAND	SILICA SAND
POTASSIUM FELSPAR SAND	SODA FELSPAR SAND"
QUARTZ SAND	

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.

38 The following text is inserted under the Bulk Cargo Shipping Name:

"The provisions of this schedule shall not apply to:

.1 solvent extracted rape seed meal, soya bean meal, cotton seed meal and sunflower seed meal, containing not more than 4% oil and 15% oil and moisture combined and being substantially free from flammable solvents;

.2 mechanically expelled citrus pulp pellets containing not more than 2.5% oil and 14% oil and moisture combined;

.3 mechanically expelled corn gluten meal containing not more than 11.0% oil and 23.6% oil and moisture combined;

.4 mechanically expelled corn gluten feed pellets containing not more than 5.2% oil and 17.8% oil and moisture combined; and

.5 mechanically expelled beet pulp pellets containing not more than 2.8% oil and 15.0% oil and moisture combined.

A certificate from a person recognized by the competent authority of the country of shipment shall be provided by the shipper, prior to loading, stating that the provisions of the exemption are met."

39 In the section for Description, the following paragraph is deleted:

"The provisions of this schedule should not apply to solvent extracted rape seed meal, pellets, soya bean meal, cotton seed meal and sunflower seed meal, containing not more than 4% oil and 15% oil and moisture combined and being substantially free from flammable solvents. The provisions of this schedule also apply to mechanically expelled citrus pulp pellets containing not more that 2.5% oil and 14% oil and moisture combined. A certificate from a person recognized by the competent authority of the country of shipment should be provided by the shipper, prior to loading, stating that the provisions of the exemption are met."

SEED CAKE (non-hazardous)

40 The following text is inserted under the Bulk Cargo Shipping Name:

"The provisions of this schedule shall only apply to:

.1 solvent extracted rape seed meal, soya bean meal, cotton seed meal and sunflower seed meal, containing not more than 4% oil and 15% oil and moisture combined and being substantially free from flammable solvents;

.2 mechanically expelled citrus pulp pellets containing not more than 2.5% oil and 14% oil and moisture combined;

.3 mechanically expelled corn gluten meal containing not more than 11.0% oil and 23.6% oil and moisture combined;

.4 mechanically expelled corn gluten feed pellets containing not more than 5.2% oil and 17.8% oil and moisture combined; and

.5 mechanically expelled beet pulp pellets containing not more than 2.8% oil and 15.0% oil and moisture combined."

41 In the section for Description, the following text is deleted:

"The provisions of this schedule apply to solvent extracted rape seed meal, pellets, soya bean meal, cotton seed meal and sunflower seed meal, containing not more than 4% oil and 15% oil and moisture combined and being substantially free from flammable solvents. The provisions of this schedule also apply to mechanically expelled citrus pulp pellets containing not more than 2.5% oil and 14% oil and moisture combined."

and the following text, contained in the section for Description, is moved at the end of the section for Loading:

"A certificate from a person recognized by the competent authority of the country of shipment shall be provided by the shipper, prior to loading, stating that the requirements for exemption as set out either in the schedule for seed cake UN 1386 (b) or UN 2217, whichever is applicable, are met."

SILICOMANGANESE (low carbon)
with known hazard profile or known to evolve gases with silicon content of 25% or more

42 In the Bulk Cargo Shipping Name, delete the words "**with known hazard profile or known to evolve gases with silicon content of 25% or more**".

43 Replace the existing text under the section for Description with the following:

"A ferroalloy comprising principally manganese and silicon, mainly used as a deoxidizer and alloying element in the steel-making process. Particle or lump of blackish brown, silver white metal."

44 The existing table of Characteristics is replaced with the following:

"

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	3,000 to 3,300	0.30 to 0.33
Size	**Class**	**Group**
10 mm to 150 mm	MHB	B

"

45 Replace the existing text under the section for Hazard with the following:

"This cargo is non-combustible and has a low fire-risk. However, in contact with water this cargo may evolve hydrogen, a flammable gas that may form explosive mixtures with air and may, under similar conditions, produce phosphine and arsine, which are highly-toxic gases. This cargo is liable to reduce oxygen content in a cargo space. May cause long-term health effect."

46 In the section for Precautions, the following text is deleted:

"Prohibition of smoking in dangerous areas shall be enforced, and clearly legible "NO SMOKING" signs shall be displayed. Electrical fittings and cables shall be in good condition and properly safeguarded against short circuits and sparking. Where a bulkhead is required to be suitable for segregation purposes, cable and conduit penetrations of the decks and bulkheads shall be sealed against the passage of gas and vapour. Ventilation systems shall be shut down or screened and air condition systems, if any, placed on recirculation during loading or discharge, in order to minimize the entry of dust into living quarters or other interior spaces of the ship. Precautions shall be taken to minimize the extent to which dust may come in contact with moving parts of deck machinery and external navigation aids (e.g. navigation lights)."

SULPHUR (formed, solid)

47 The following text, contained in the section for Description, is moved under the Bulk Cargo Shipping Name:

"This schedule shall not apply to crushed, lump and coarse-grained sulphur (see SULPHUR UN 1350), or to co-products from sour gas processing or oil refinery operations NOT subjected to the above-described forming process."

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

"**ALUMINA HYDRATE**

Description
Alumina hydrate is a fine, moist, white (light coloured), odourless powder. Insoluble in water and organic liquids.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	500 to 1,500	0.67 to 2.0
Size	**Class**	**Group**
Fine powder	MHB	A and B

Hazard
This cargo may liquefy if shipped at moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of the Code. Alumina Hydrate dust is very abrasive and penetrating. Irritating to eyes, skin and mucous membranes. This cargo is non-combustible or has low fire-risks.

Stowage and segregation
Separated from oxidizing materials.

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 specially constructed or fitted cargo ship complying with the requirements in subsection 7.3.2 of this Code, the following provisions shall be complied with:

.1 the moisture content of the cargo shall be kept less than its TML during 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
Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code.

Precautions
Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo. Bilge system of a cargo space to which this cargo is to be loaded shall be tested to ensure it is working. Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust 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 goggles or other equivalent dust eye-protection and dust filter masks. Those persons shall wear protective clothing, 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 capsize of the ship, and give consideration to seeking emergency entry into a place of refuge.

Discharge
No special requirements.

Clean-up
The water used for the cleaning of the cargo spaces, after discharge of this cargo, shall not be pumped by the fixed bilge pumps. A portable pump shall be used, as necessary, to clear the cargo spaces of the water.

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** Nil (non-combustible) **Medical First Aid** Refer to the Medical First Aid Guide (MFAG), as amended.

"

"ALUMINIUM SMELTING / REMELTING BY-PRODUCTS, PROCESSED

The provisions of this schedule shall not apply to ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS UN 3170.

Description
Product obtained by treating the by-products of merging/recasting of aluminium with water and/or alkalis solutions to render the material less reactive with water. A damp powder with a slight smell of ammonia.

Characteristics

Angle of repose	Bulk density (kg/ m^3)	Stowage factor (m^3/t)
Not applicable	1,080 to 1,750	0.57 to 0.93
Size	**Class**	**Group**
Less than 1 mm	MHB	A and B

Hazard
This cargo may develop small amount of hydrogen, a flammable gas which may form explosive mixtures with air, and of ammonia, which is a highly toxic gas.
This cargo may liquefy if shipped at moisture content in excess of its transportable moisture limit (TML). See sections 7 and 8 of the Code. Corrosive to eyes.

Stowage and segregation
"Separated from" foodstuffs and all Class 8 liquids. Segregation as for Class 4.3 materials.

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

Weather precautions
This cargo shall be kept as dry as practicable and the moisture content shall be kept less than its TML during loading operations and the voyage. 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 of sections 4 and 5 of this Code.

Precautions
Persons who may be exposed to the cargo shall wear personal protective equipment, including goggles and/or skin protection as necessary. Prior to loading this cargo, a weathering certificate shall be provided by the manufacturer or shipper stating that, after manufacture, the material was stored under cover, but exposed to the weather in the particle size to be shipped, for not less than four weeks prior to shipment. Whilst the ship is alongside and the hatches of the cargo spaces containing this cargo are closed, the mechanical ventilation shall be operated continuously as weather permits. During handling of this cargo, "NO SMOKING" signs shall be posted on decks and in areas adjacent to cargo spaces and no naked lights shall be permitted in these areas. Bulkheads between the cargo spaces and the engine-room shall be gastight. Inadvertent pumping through machinery spaces shall be avoided. Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

Ventilation
Continuous mechanical ventilation shall be conducted during the voyage for the cargo spaces carrying this cargo. If maintaining ventilation endangers the ship or the cargo, it may be interrupted unless there is a risk of explosion or other danger due to interruption of the ventilation. In any case, mechanical ventilation shall be maintained for a reasonable period prior to discharge. Ventilation shall be arranged such that any escaping gases are minimized from reaching living quarters on or under the deck.

Carriage
For quantitative measurements of hydrogen, ammonia and acetylene, suitable detectors for each gas or combination of gases shall be on board while this cargo is carried. The detectors shall be of certified safe type for use in explosive atmosphere. The concentrations of these gases in the cargo spaces carrying this cargo shall be measured regularly, during voyage, and the results of the measurements shall be recorded and kept on board. 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. Hatches of the cargo spaces carrying this cargo shall be weathertight to prevent the ingress of water.

Discharge
No special requirements.

Clean-up
Persons who may be exposed to the cargo shall wear personal protective equipment including goggles and/or skin protection as necessary. After discharge of this cargo, the bilge wells and scuppers of the cargo spaces shall be checked and any blockage shall be removed.

Prior to using water for hold cleaning, holds should be swept to remove as much cargo residues as practicable.

Emergency procedures

Special emergency equipment to be carried
Nil
Emergency procedures
Nil
Emergency action in the event of fire
Batten down and use CO_2 if fitted
Medical first aid
Refer to the Medical First Aid Guide (MFAG), as amended

"

"CLINKER ASH, WET

Description
Coal ash discharged from coal-fired power stations. Grey-coloured, possibly ranging from near-white to near-black, and odourless substance collected from the bottom of boilers, and resembles sand. Moisture content is about 15% to 23%. Insoluble in water.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	600 to 1,700	0.6 to 1.7
Size	**Class**	**Group**
Up to 90 mm	MHB	A and B

Hazard
The material may liquefy if shipped at a moisture content in excess of its Transportable Moisture Limit (TML). See sections 7 and 8 of the Code. May cause long-term health effects. This cargo is non-combustible or has a low fire-risk.

Stowage and Segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
This cargo shall be kept as dry as practicable before loading, during loading and while on the voyage. When a cargo is carried in a ship other than a specially constructed or fitted cargo ship complying with the requirements in subsection 7.3.2 of this Code, the following provisions shall be complied with:

.1 the moisture content of the cargo shall be kept less than its TML during 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
Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code.

Precautions
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.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-Up
No special requirements.

Emergency procedures

Special emergency equipment to be carried Protective clothing (goggles, dust filter masks, gloves, coveralls).
Emergency procedures Wear protective clothing. **Emergency action in the event of fire** Nil (non-combustible) **Medical First Aid** Refer to the Medical First Aid Guide (MFAG), as amended.

"

"**COAL TAR PITCH**

Description
A coarse distilled residue of Coal Tar, a by-product of Cokes production. Mostly comprises many kinds of polycyclic aromatic hydrocarbon. A black solid at ambient temperature. It is insoluble in water. A raw material in use for electrodes and materials covering pitch bound on metallurgy coke. The moisture content is up to 6%.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	600 to 1,100	0.9 to 1.7
Size	**Class**	**Group**
Up to 100mm 0 to 10% of fine particles: less than 1 mm	MHB	B

Hazard
This cargo is non-combustible or has a low fire-risk. When heated, it melts and turns into inflammable liquid. It softens between 70°C and 120°C. Corrosive to eyes. May cause long-term health effects.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
No special requirements.

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

Precautions
Persons who may be in contact with this cargo shall be supplied with protective gloves, dust masks, protective clothing and goggles.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-up
No special requirements.

Emergency procedures

Special emergency equipment to be carried Protective clothing (gloves, boots, overalls, headgear, dust masks and goggles).
Emergency procedures Wear protective clothing, protective gloves, dust masks and goggles. **Emergency action in the event of fire** Batten down: use ship's fixed fire-fighting installation if fitted. Exclusion of air may be sufficient to control fire. **Medical first aid** Refer to the Medical First Aid Guide (MFAG), as amended.

"

"COARSE IRON AND STEEL SLAG AND ITS MIXTURE

Description

A coarse slag arising from iron and steel manufacture, and a coarse slag mixed with one of the following substances or a combination thereof: concrete debris, fly-ash, firebricks, dust collected from iron/steel-making processes, refractory material debris and fine raw materials of iron making.

This cargo includes shaped blocks made of iron and steel slag with one of the additives or a combination of additives: cement, ground granulated blast furnace slag and fly-ash, and its debris, and their mixture with iron and steel slag.

The colour is in the range from greyish-white to dark grey, and the appearance is in the range from granulated, pebble to block shaped.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	1,200 to 3,000	0.33 to 0.83
Size	**Class**	**Group**
90 to 100% of lumps: up to 300 mm 0 to 10% fine particles: less than 1 mm	Not applicable	C

Hazard
No special requirements.
This cargo is non-combustible or has a low fire-risk.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
No special requirements.

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

When the stowage factor of this cargo is equal or less than 0.56 m^3/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.

Precautions
Persons who may be exposed to the dust of the cargo shall wear goggles or other equivalent dust eye-protection and dust filter masks, as necessary.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-up
No special requirements."

"CRUSHED CARBON ANODES

Description
Crushed Carbon Anodes are spent carbon anodes that are crushed into smaller pieces to permit their shipment for recycling. Carbon anodes are used to introduce electricity into the aluminium smelter pots. This cargo is mainly composed of black crushed lumps and pieces principally containing carbon and other impurities. The material is odourless.

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	800 to 1,000	1.00 to 1.25
Size	**Class**	**Group**
Mainly coarse pieces up to 60 cm +	Not applicable	C

Hazard
This cargo may generate dust. This cargo is non-combustible or has a low fire-risk.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
No special requirements.

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

Precautions
Persons who may be exposed to the dust of the cargo shall wear protective clothing, goggles or other equivalent dust eye-protection, dust filter mask and barrier creams as necessary.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-up
No special requirements."

"GRAIN SCREENING PELLETS

The provision of this schedule shall apply only to Grain Screening Pellets material containing not more than 6.2% oil content and not more than 17.5% oil and moisture content combined.

Description
Grain Screening Pellets are animal feed products, pelletized animal feed derived from dockage removed from grains. Screenings means dockage that has been removed from grain that does not qualify for any other grain grades. Depending upon their quality, screenings vary in level of parent and volunteer grain material,

broken or shrunken kernels, hulls, weed seeds, chaff, dust and other plant material. The colour ranges from brown to yellow.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
less than 30°	478 to 719	1.39 to 2.09
Size	**Class**	**Group**
Length: 12 to 38 mm Diameter: 4 to 7 mm	Not applicable	C

Hazard
This cargo flows freely like grain. This cargo is non-combustible or has a low fire-risk.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

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 the cargo is loaded or to be loaded shall be closed.

Loading
Trim in accordance with the relevant provisions required under sections 4, 5 and 6 of the Code in accordance with the shipper's declaration of the angle of repose.

A certificate from a person recognized by the competent authority of the country of shipment shall be provided by the shipper to the master, prior to loading, confirming that the oil and the moisture contents as described in the schedule have been met.

Precautions
Persons who may be exposed to the dust of the cargo shall wear a dust filter mask, protective eyewear, and protective clothing as necessary.

Carriage
Hatches of the cargo spaces shall be weather tight to prevent water ingress.

Discharge
No special requirements.

Ventilation
No special requirements.

Clean-up
No special requirements.

Emergency Procedures
No special requirements."

"GRANULATED NICKEL MATTE (LESS THAN 2% MOISTURE CONTENT)

Description
Crude dark grey nickel product composed of about 55% nickel, 20% copper and 25% other mineral impurities. The material is odourless.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	2,800 to 4,000	0.25 to 0.36
Size	**Class**	**Group**
Up to 3 mm	MHB	B

Hazard
Contact with the skin may give rise to irritation.
This cargo is non-combustible or has a low fire-risk.
This cargo is moderately toxic by inhalation.

Stowage and segregation
Separated from 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 the 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 the tank top is not overstressed during voyage and during loading process by a pile of the cargo.

Precautions
Persons who may be exposed to the dust component of the cargo shall wear personal protective equipment including goggles or other equivalent dust eye-protection, respiratory protection, and/or skin protection as necessary. Due consideration shall be paid to prevent dust entering living quarters and enclosed working area. Eating and drinking is prohibited in the cargo work areas. Appropriate precautions shall be taken to protect machinery and accommodation spaces from the dust of the cargo.

Carriage
No special requirements.

Discharge
No special requirements.

Ventilation
No special requirements.

Clean-up
No special requirements.

Emergency procedures

Special emergency equipment to be carried Protective clothing (gloves, boots, coveralls) Self-contained breathing apparatus
Emergency procedures Wear protective clothing and self-contained breathing apparatus. **Emergency action in the event of fire** Nil (non-combustible) **Medical First Aid** Refer to the *Medical First Aid Guide (MFAG)*, as amended.

"

"**GYPSUM GRANULATED**

Description
Gypsum Granulated made from calcium sulphate hydrate which is produced artificially or industrial by-product. It is produced by granulating and processing such calcium sulphate hydrate until its grain size becomes 10 mm diameter or more. Insoluble in water.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	310 to 1,200	0.83 to 3.23
Size	**Class**	**Group**
Greater than 10 mm	Not applicable	C

Hazard
No special hazards.
This cargo is non-combustible or has a low fire-risk.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
No special requirements.

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

Precautions
No special requirements.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-up
No special requirements."

"**ILMENITE (ROCK)**

Description
Ilmenite (Rock) is obtained from mine blasting followed by crushing. It has a black colour. It may be smelted in electric arc furnaces or can be used in blast furnaces.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	2,400 to 3,200	0.31 to 0.42
Size	**Class**	**Group**
Up to 100 mm	Not applicable	C

Hazard
This cargo has no special hazards.
This cargo is non-combustible or has a low fire-risk.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.
Weather precautions
No special requirements.

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

Precautions
Avoid breathing dust. Persons who may be exposed to the dust of the cargo shall wear a dust filter mask, protective eyewear and clothing as necessary.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-up
No special requirements."

"ILMENITE (UPGRADED)

Description
Ilmenite (upgraded), is obtained from the smelting of rock or sand Ilmenite into electric arc furnaces. Ilmenite (upgraded) has a granular form and its colour varies from black (normal grades) to brown-orange for its purified grade.

Ilmenite (upgraded) is also known as Titanium slag, Titanium Ore Concentrate, Chloride Slag, Sulphate Slag, High Grade Sulphate Slag, Slag fines, Slag ilmenite electro thermal smelting or TiO_2 slag.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	1,860 to 2,400	0.41 to 0.54
Size	**Class**	**Group**
Up to 12 mm	Not applicable	A

Hazard
This material may liquefy if shipped at 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 and segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
This cargo shall be kept as dry as practicable before loading, during loading and while on the voyage. When a cargo is carried in a ship other than a specially constructed or fitted cargo ship complying with the requirements in subsection 7.3.2 of this Code, the following provisions shall be complied with:

.1 the moisture content of the cargo shall be kept less than its TML during 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
Trim in accordance with the relevant provisions required under sections 4 and 5 of the 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 the tank top is not overstressed during voyage and during loading by a pile of the cargo.

Precautions
Bilge wells shall be clean, dry and covered as appropriate to prevent ingress of the cargo. Avoid breathing dust. Persons who may be exposed to the dust component of the cargo shall wear personal protective equipment including goggles or other equivalent dust eye-protection and respiratory protection as necessary. Wash hands and face before eating, drinking or smoking.

Ventilation
No special requirements.

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

Discharge
No special requirements.

Clean-up
No special requirements."

"NICKEL ORE

Description
Nickel ore varies in colour. There are several types of ore of variable particle size and moisture content. Some may contain clay-like ores. For concentrates, see NICKEL CONCENTRATE.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	1,400 to 1,800	0.55 to 0.71
Size	**Class**	**Group**
Various	Not applicable	A

Hazard
This material 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 and segregation
No special requirements.

Hold cleanliness
Cargo spaces must be clean and dry.

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

.1 all measures shall be taken during loading operations and the voyage to avoid an increase in the moisture content of the cargo;

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

When the stowage factor of this cargo is equal or less than 0.56 m^3/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.

Precautions
Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo. The bilge system of a cargo space to which this cargo is to be loaded shall be tested to ensure that it is working.

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

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

Discharge
No special requirements.

Clean-up
No special requirements."

"SAND, HEAVY MINERAL

Description
The cargo is generally a blend of two or more heavy mineral sands. Such sands are characterized by their heavy bulk density and relatively fine grain size.
Abrasive. May be dusty.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	2,380 to 3,225	0.31 to 0.42
Size	**Class**	**Group**
Up to 5 mm	Not applicable	A

Hazard
This cargo may liquefy if shipped at a moisture content in excess of its TML. See sections 7 and 8 of this Code.

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

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

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

.1 the moisture content of the cargo shall be kept less than its TML during 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
Trim in accordance with the relevant provisions required under sections 4 and 5 of the 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
Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

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 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."

"**SILICON SLAG**

Description
Silicon slag is an odourless greyish metallic material mainly in lump. It is composed of silicon and silicon dioxide in variable proportions.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	2,300 to 3,000	0.33 to 0.43
Size	**Class**	**Group**
Up to 150 mm	Not applicable	C

Hazard
The dust may cause irritation of eyes, skin and upper respiratory tract.
This cargo is non-combustible or has a low fire-risk.

Stowage and segregation
"Separated from" acids or base materials.

Hold cleanliness
No special requirements.

Weather precautions
No special requirements.

Loading
Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code. 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 the voyage and during the loading process by a pile of the cargo.

Precautions
Persons who may be exposed to the dust of the cargo shall wear protective clothing, goggles or other equivalent dust eye-protection and dust filter mask as necessary.

Ventilation
No special requirements.

Carriage
No special requirements.

Discharge
No special requirements.

Clean-up
No special requirements."

"SOLIDIFIED FUELS RECYCLED FROM PAPER AND PLASTICS

This schedule shall not apply to material classified as dangerous goods (Class 4.2).

Description
Solidified fuels comprising papers and plastics by compressing or extruding in moulds. The main raw materials of this cargo are waste paper and plastic. Moisture content is 5% or less. Ash content is 10% or less. Total chlorine is 0.3% or less.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
Not applicable	400 to 500	2.0 to 2.5
Size	**Class**	**Group**
Length: 30 to 100 mm Diameter: 15 to 30 mm	MHB	B

Hazard
Spontaneous ignition is not liable to occur up to 200°C. When ignited, it burns violently. When melted, it generates flammable and toxic gases. Spontaneous-heating may take place and may deplete oxygen in the cargo spaces.

Stowage and segregation
No special requirements.

Hold cleanliness
No special requirements.

Weather precautions
No special requirements.

Loading
Prior to loading, the manufacturer or shipper shall give the master a certificate stating that the cargo is not class 4.2. Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code.

Precautions
During handling and carriage, no hot work, burning and smoking shall be permitted in the vicinity of the cargo spaces containing this cargo. After discharging this cargo, entry into cargo spaces shall not be permitted unless they have been sufficiently ventilated.

Ventilation
The hatches of the cargo spaces shall be closed and the spaces shall not be ventilated during voyage.

Carriage
Entry into the cargo spaces shall not be permitted during voyage.

Discharge
The hatches of the cargo spaces shall be opened and sufficiently ventilated prior to entry.

Clean-up
No special requirements.

Emergency procedures

Special emergency equipment to be carried Protective clothing (protective glasses, heat-resistant gloves, coveralls).
Emergency procedures Wear protective clothing. **Emergency action in the event of fire** Batten down; use ship's fixed fire-fighting installation, if fitted. Extinguish fire with water, foam or dry chemicals. **Medical First Aid** Refer to the Medical First Aid Guide (MFAG), as amended.

"

"WOOD TORREFIED

Description
Wood torrefied is wood that has been partially burned or roasted and formed into pellets or briquettes. Chocolate brown or black in colour. May contain up to 3% binder.

Characteristics

Angle of repose	Bulk density (kg/m^3)	Stowage factor (m^3/t)
35° or less	650 to 800	1.25 to 1.54
Size	**Class**	**Group**
Pellets with a diameter of 6 to 12 mm. Briquettes with a thickness of 12 to 50 mm and a length and width up to 75 mm.	MHB	B

Hazard
Shipments may be subject to oxidation leading to depletion of oxygen and increase of carbon monoxide and carbon dioxide in cargo and adjacent spaces.

Wood torrefied is readily combustible and may self-heat and spontaneously combust.

Handling of wood torrefied may cause dust to develop with a subsequent risk of dust explosion when loading. Dust may cause eye, skin and respiratory irritation.

Stowage and segregation
Segregation as for class 4.1 materials.

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, 5 and 6 of the Code.

Precautions
Entry of personnel into cargo and adjacent confined spaces shall not be permitted until tests have been carried out and it has been established that the oxygen content and carbon monoxide levels have been restored to the following levels: oxygen 20.7% and carbon monoxide <100 ppm. If these conditions are not met, additional ventilation shall be applied to the cargo hold or adjacent confined spaces and remeasuring shall be conducted after a suitable interval. An oxygen and carbon monoxide meter shall be worn and activated by all crew when entering cargo and adjacent enclosed spaces.

Persons who may be exposed to the dust of the cargo shall wear protective clothing, goggles or other equivalent dust eye-protection and dust filter masks, as necessary.

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

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

Discharge
No special requirements.

Clean-up
No special requirements.

Emergency procedures

Special emergency equipment to be carried Self-contained breathing apparatus and combined or individual oxygen and carbon monoxide meters should be available.
Emergency procedures Nil **Emergency action in the event of fire** Batten down; use ship's fixed fire-fighting installation, if fitted. Exclusion of air may be sufficient to control fire. Extinguish fire with carbon dioxide, foam or water. **Medical First Aid** Refer to the Medical First Aid Guide (MFAG), as amended.

"

Appendix 3 – Properties of solid bulk cargoes

1 Non-cohesive cargoes

49 In paragraph 1.1, the new following Bulk Cargo Shipping Names are inserted in alphabetical order:

"GRAIN SCREENING PELLETS"
"WOOD TORREFIED"

Appendix 4 – Index

50 Include in ALUMINA HYDRATE a synonym as:

"Aluminium hydroxide"

51 Insert an additional name under SAND as:

"

Material	Group	References
Spodumene	C	*see* SAND

"

52 In the line for SILICOMANGANESE in the line for Material, amend the Bulk Shipping Name to read "SILICOMANGANESE (low carbon)".

53 Include the following names in the alphabetical index:

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Material	Group	References
ALUMINA HYDRATE	A and B	
ALUMINIUM SMELTING / REMELTING BY-PRODUCTS, PROCESSED	A and B	
CLINKER ASH, WET	A and B	
COAL TAR PITCH	B	
COARSE IRON AND STEEL SLAG AND ITS MIXTURE	C	
CRUSHED CARBON ANODES	C	
GRAIN SCREENING PELLETS	C	
GRANULATED NICKEL MATTE (LESS THAN 2% MOISTURE CONTENT)	B	
GYPSUM GRANULATED	C	
ILMENITE (ROCK)	C	
ILMENITE (UPGRADED)	A	
NICKEL ORE	A	
SAND, HEAVY MINERAL	A	
SILICON SLAG	C	
SOLIDIFIED FUELS RECYCLED FROM PAPER AND PLASTICS	B	
WOOD TORREFIED	B	

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