

# TECHNICAL CIRCULAR No. 017 of 24 July 2011

To:	All Surveyors
Applicable to flag:	All Flags
Subject:	Issuance of Exemption Certificates for Fixed-gas Fire-Fighting Systems
Reference:	POLLUTION - MEPC 187(59) MARPOL Annex I-Amendments

## Issuance of Exemption Certificates for Fixed-gas Fire-fighting Systems

## PURPOSE

SOLAS Regulation II-2/53.1 was amended under the 1996 Amendments, such that any exemption previously granted by the flag Administration, relative to the provision of a fixed-gas fire-extinguishing system within cargo spaces that were not documented by an exemption certificate, must (as of 1 July 1998) be documented with an exemption certificate and a list of cargoes intended to be carried under the exemption granted, as contained in MSC/Circ.1146. This also applies to the renewal of previously issued exemption certificates. Further, in order to avoid possible problems with Port State Control, many Owners are requesting that existing exemption certificates be replaced (prior to the expiration date) by new exemption certificates that comply with the amended regulation. The Regulation number changed to II-2/10.7 when the new chapter II-2 came into force under the 2000 SOLAS amendments on 1 July 2002.

# APPLICABILITY

- In addition to the previous SOLAS requirements addressing fixed-gas fire-extinguishing systems, cargo spaces on cargo ships ≥ 2000 gt or cargo spaces in any ship engaged in the carriage of dangerous goods constructed on or after 1 July 2002 need to be fitted with a fixed carbon-dioxide or inert gas fire-extinguishing system complying with provisions of the Fire Safety Systems Code, or by a fire-extinguishing system that gives equivalent protection in accordance with SOLAS II-2/10.7.1.3 or II-2/10.7.2, respectively.
- 2. An exemption can only be granted by the Flag Administration for the ship indicating that certain cargo spaces are exempted from being fitted with a fixed-gas fire-extinguishing system, provided that the following three (3) conditions are complied with:

- Vessel is fitted with steel hatch covers and an effective means of closing all ventilators and other openings leading to the cargo spaces;
- Cargo carried in the cargo space is limited to solid bulk cargoes that are non-combustible or constitute a low fire risk, as contained in the attached Table 1 of MSC/Circ.1146.
- No dangerous goods requiring a fixed fire-extinguishing system or not included in the accepted list are to be carried in the hold or directly above the hold under consideration for exemption.
- 3. Requests for the exemption and allowance for the carriage of cargoes other than those in Table 1 of MSC/Circ.1146 must be accompanied by documentation stating that such cargoes are non-combustible or constitute a low-fire risk, and are subject to approval by the Flag Administration in each instance.
- 4. Based on the above, at the next survey, the Owner should be informed of this SOLAS amendment and that:
- An exemption certificate is needed, with an attached list of cargoes which may be carried, for ships which have been exempted from the fitting of fixed-gas fire-extinguishing systems in cargo holds but which exemption has not been documented by an exemption certificate; or
- Renewals of existing exemption certificates, upon their expiry, are to be in accordance with the amended regulation and are to include an attached list of cargoes which may be carried; or
- It may be prudent to obtain an exemption certificate complying with the amended regulation, including an attached list of cargoes which may be carried, in order to avoid delays involved with questions which may be raised by Port State Control Officers.
- 5. In each case, the Owner is to confirm from the cargoes indicated in Table 1 of the MSC/Circ.1146 which cargoes are to be indicated in the list that is attached to the exemption certificate. The Surveyor shall use the attached list of cargoes to indicate which cargoes may be carried by crossing out the cargoes on the list that are not applicable, then shall sign, date, and stamp the list. Should a cargo that is carried not be on the attached list, please refer to item 4 for guidance. This list shall be attached to the exemption certificate. The Surveyor may photocopy the list from the process instruction for use.
- 6. A copy of the interim exemption certificate and the attached list of cargoes, confirmed by the Owner, shall be faxed to the appropriate ABS Contact Office, who will in turn transmit it to the Administration for issuance of the full term exemption certificate, except in the case of Panama where owners must submit the application directly to the administration.
- 7. When filling out the exemption certificate form, if requested by Conarina Head Office, is to be completed to read:

THIS IS TO CERTIFY:

That the Ship is under the authority conferred by Regulation II-2/10.7.1.4 of the Convention exempted from the requirements of (Insert appropriate SOLAS Regulation from Table A, based on keel laying date) of the Convention.

Tab Appropriate SOLAS Regulation	le A Keel Laying Date
51(a)(i) of 1948 SOLAS	Prior to 26 May 1965
65(f)(i) of 1960 SOLAS	On/after 26 May 1965 but prior to 25 May 1980
II-2/52(f)(i), as applicable, of 1974 SOLAS	On/after 25 May 1980 but prior to 1 September 1984
II-2/53.1.1 of 1974 SOLAS, 1981 Amendments	On/after 1 September 1984 but prior to 1 July 1998
II-2/53.1.1 of 1974 SOLAS, 1996 Amendments	On/after 1 July 1998 but prior to 1 July 2002
II-2/10.7.1.3 and II-2/10.7.2 of 1974 SOLAS, 2000 Amendments	On/after 1 July 2002

8.Insert the following paragraph, if any on which the Exemption Certificate is granted:

Cargo Spaces (indicate applicable hold numbers) have been exempted from being fitted with a fixed-gas fire-extinguishing system for the carriage of non-combustible or low fire risk cargoes, which are indicated on the attached list.

#### ANNEX to MSC/Circ. 1146

#### List of solid bulk cargoes that are non-combustible or constitute a low fire risk

Cargoes listed in regulation **II-2/10.7.1.4** 

Ore Coal (Coal and Brown Coal Briquettes) Grain Unseasoned timber Cargoes listed in the Code of Safe Practice for Solid Bulk Cargoes (BC Code), which are not combustible or constitute a low fire risk.

The following cargoes categorized into Group A in the BC Code :

Blende (zinc sulphide)	Magnetite-taconite
Cement copper	Manganese concentrate
Chalcopyrite	Nefeline syenite (mineral)
Coal Slurry	Nickel concentrate
Coke Breeze	Nickel ore concentrate
Copper concentrate	Pentahydrate crude
Copper nickel	Pyrites
Copper Ore Concentrate	Pyrites (cupreous, fine, flotation, or sulphur)
Copper Precipitates	Pyritic ashes (iron)
Galena (lead sulphide)	Pyritic cinders
Ilmenite clay	Silver lead concentrate
Iron concentrate	Silver lead ore concentrate
Iron concentrate ( pellet feed, sinter feed)	Slig (iron ore)
Iron ore (concentrate, pellet feed, sinter feed)	Zinc and lead calcines
Lead and zinc calcines (mixed)	
Lead and zinc middlings	Zinc and lead middlings
Lead concentrate	Zinc concentrate
Lead ore concentrate	Zinc ore (burnt ore)
Lead ore residue	Zinc ore (calamine)
	Zinc ore (concentrates)
Lead silver concentrate	Zinc ore (crude)
Lead silver ore	Zinc sinter
Lead sulphide	Zinc sludge
Lead sulphide (galena)	Zinc sulphide
Magnetite	Zinc sulphide (blende)
Iron concentrate ( pellet feed, sinter feed) Iron ore (concentrate, pellet feed, sinter feed) Lead and zinc calcines (mixed) Lead and zinc middlings Lead concentrate Lead ore concentrate Lead ore residue Lead silver concentrate Lead silver ore Lead sulphide Lead sulphide (galena)	Slig (iron ore) Zinc and lead calcines Zinc and lead middlings Zinc concentrate Zinc ore (burnt ore) Zinc ore (calamine) Zinc ore (concentrates) Zinc ore (crude) Zinc sinter Zinc sludge Zinc sulphide

The following cargoes categorized into Group B in the BC Code:

Aluminum processing by-products, UN3170	Petroleum coke*
Aluminum ferrosilicon powder (including briguettes), UN 1395	Pitch Prill
Aluminum silicon powder, uncoated, UN 1398	Radioactive Material, Low Specific Activity Material (LSA-1), UN 2912
Calcined pyrides (Pyritic ash)	Radioactive Material, Surface Contaminated Object(s) (SCO-1), UN 2913
Direct reduced iron briquettes, hot moulded	Silicomanganese
Ferrophosphorus (including briquettes)	Sulphur (lump or coarse grained powder), UN 1350
Ferrosilicon, containing more than 30% but less than 90% silicon (including briquettes) UN 1408	Vanadium ore
Ferrosilicon containing 25% to 30% silicon, or 90% or more silicon (including briquettes)	Woodchips with moisture content of 15% or more

Wood pulp pellets with moisture content of 15% or more
Zinc ashes, UN 1435
Zinc dross
Zinc residues
Zinc skimmings

\* When loaded and transported under the provisions of the BC Code. The following cargoes categorized into Group C in the BC Code:

Alumina   Magnesia (deadburned) (deadburned magnesite, magnesia clinker, electrofused magnesia, magnesite clinker)     Alumina, calcined (Calcined clay)   Magnesite, natural (Magnesium Carbonate)     Alumina silica   Magneses ore     Alumina silica, pellets   Marble chips     Ammonium nitrate fertilizers (non-hazardous)   Milorganite     Antimony ore and residue (Stibnite)   Muriate of potash     Barytes   Peanuts (in shell)     Bauxite   Pellets (concentrates)     Borax anhydrous (crude or refined)   Perite rock     Borax anhydrous (crude or refined)   Perite rock, calcined     Carborundum   Phosphate, defluorinated     Carborundum   Phosphate rock, calcined     Carborundum   Phosphate rock, uncalcined     Cement   Pig iron     Cement clinkers   Potash     Chrome Pore   Potassium sulphate     Chromite Ore (Chromium Ore)   Pyrite (containing copper and iron)     Coke)   Pyrophyllite     Copper granules   Quartzt     Copper granules   Quartzt     Copper granules   Salt cake     Felspar lump   Salt cake     Felspar, soda felspar)   Ferrochrom	Alfalfa	Limestone
electrofused magnesia, magnesite clinker)       Alumina, calcined (Calcined clay)     Magnesite, natural (Magnesium Carbonate)       Alumina silica     Manganese ore       Aumonium nitrate fertilizers (non-hazardous)     Milorganite       Ammonium sulphate     Monoammonium phosphate       Antimony ore and residue (Stibnite)     Muriate of potash       Barytes     Peanuts (in shell)       Bauxite     Pebles (sea)       Biosludge     Pellets (concentrates)       Borax anhydrous (crude or refined)     Perlite rock       Borax (Pentahydrate crude,)     Phosphate, defluorinated       Calcium nitrate fertilizer     Phosphate rock, uncalcined       Carborundum     Phosphate rock, uncalcined       Cement     Pig iron       Cement clinkers     Potassium Chloride (Muriate of Potash)       Chrome pellets     Pumice       Chromite Ore (Chromium Ore)     Pyrite (containing copper and iron)       Coke)     Pyrophyllite       Copper granules     Quartzite       Copper granules     Salt cake       Dolomite     Salt cake       Feirsorkrome, exothermic     Salt cake       Feirsorkrome, exoth	Alumina	
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Alumina, calcined (Calcined clay)     Magnesite, natural (Magnesium Carbonate)       Alumina silica, pellets     Marble chips       Ammonium nitrate fertilizers (non-hazardous)     Milorganite       Antimony ore and residue (Stibnite)     Muriate of potash       Barytes     Peanuts (in shell)       Bauxite     Pebbles (sea)       Borax anhydrous (crude or refined)     Perlite rock       Borax (Pentahydrate crude,)     Phosphate rock, calcined       Carborundum     Phosphate rock, uncalcined       Carborundum     Phosphate rock, uncalcined       Cement     Pig iron       Cement Ore     Potassium sulphate       Chrome Ore     Potassium sulphate       Chromite Ore (Chromium Ore)     Purice       Clay     Pyrite (containing copper and iron)       Coke)     Pyrophyllite       Copper matte     Rasorite (anhydrous)       Cryolite     Salt       Dolomite     Salt       Dolomite     Salt cake       Felspar lump     Salt rock       Ferrochrome, exothermic     Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)       Ferromanganese, exoth		
Alumina silica   Manganese ore     Alumina silica, pellets   Marble chips     Ammonium nitrate fertilizers (non-hazardous)   Milorganite     Antimony ore and residue (Stibnite)   Muriate of potash     Barytes   Peanuts (in shell)     Bauxite   Pebbles (sea)     Biosludge   Pellets (concentrates)     Borax anhydrous (crude or refined)   Perite rock     Borax (Pentahydrate crude,)   Phosphate, defluorinated     Calcium nitrate fertilizer   Phosphate rock, calcined     Carborundum   Phosphate rock, calcined     Carborundum   Phosphate rock, uncalcined     Cement   Pig iron     Cement Chikers   Potassium Sulphate     Chrome Ore   Potassium sulphate     Chromite Ore (Chromium Ore)   Purrice     Clay   Pyrite (containing copper and iron)     Coke)   Pyrophyllite     Copper granules   Quartzite     Copper matte   Rasorite (anhydrous)     Cryolite   Salt cake     Felspar lump   Salt cake     Felspar lump   Salt cake     Felspar lump   Salt cake     Felspar, soda felspar)		
Alumina silica, pellets   Marble chips     Ammonium nitrate fertilizers (non-hazardous)   Milorganite     Antimony ore and residue (Stibnite)   Muriate of potash     Barytes   Peanuts (in shell)     Bauxite   Pebbles (sea)     Biosludge   Pellets (concentrates)     Borax anhydrous (crude or refined)   Perite rock     Borax (Pentahydrate crude,)   Phosphate rock, calcined     Carborundum   Phosphate rock, calcined     Carborundum   Phosphate rock, calcined     Cement   Pig iron     Cement clinkers   Potash     Chrome Ore   Potassium Chloride (Muriate of Potash)     Chrome Ore   Potassium sulphate     Chrome Ore   Potassium sulphate     Caleum nitrate fertilizer   Phosphate rock, calcined     Chamotte   Potash     Chamotte   Potash     Chamotte   Potash     Chrome Ore   Potassium sulphate     Colemanite   Quartz     Copper granules   Quartz     Copper matte   Rasorite (anhydrous)     Cryolite   Rutile sand     Diammonium phosphate   Salt  <		
Ammonium nitrate fertilizers (non-hazardous)   Milorganite     Ammonium sulphate   Monoammonium phosphate     Antimony ore and residue (Stibnite)   Muriate of potash     Barytes   Peanuts (in shell)     Bauxite   Pebbles (sea)     Biosludge   Pellets (concentrates)     Borax anhydrous (crude or refined)   Perlite rock     Borax (Pentahydrate crude.)   Phosphate, defluorinated     Calcium nitrate fertilizer   Phosphate rock, calcined     Carborundum   Phosphate rock, uncalcined     Carborundum   Phosphate rock, uncalcined     Cement   Pig iron     Cement Clinkers   Potash     Chrome Ore   Potassium sulphate     Chrome Ore   Potassium sulphate     Chrome Ore (Chromium Ore)   Purice     Clay   Pyrophyllite     Cooper granules   Quartz     Copper matte   Rasorite (anhydrous)     Cryolite   Rutile sand     Diammonium phosphate   Salt     Dolomite   Salt cock     Ferspar lump   Salt cock     Ferrochrome, exothermic   Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B) <td></td> <td></td>		
Ammonium sulphate   Monoammonium phosphate     Antimony ore and residue (Stibnite)   Muriate of potash     Barytes   Peanuts (in shell)     Bauxite   Pebbles (sea)     Biosludge   Pellets (concentrates)     Borax anhydrous (crude or refined)   Perlite rock     Borax anhydrous (crude or refined)   Perlite rock     Borax (Pentahydrate crude,)   Phosphate, defluorinated     Calcium nitrate fertilizer   Phosphate rock, calcined     Carborundum   Potassium Sulphate     Chamotte   Potassium Sulphate     Chrome Ore   Potassium Sulphate     Chromite Ore (Chromium Ore)   Quartz     Coper granules </td <td></td> <td></td>		
Antimony ore and residue (Stibnite)   Muriate of potash     Barytes   Peanuts (in shell)     Bauxite   Pebbles (sea)     Biosludge   Pellets (concentrates)     Borax anhydrous (crude or refined)   Perlite rock     Borax (Pentahydrate crude,)   Phosphate, defluorinated     Calcium nitrate fertilizer   Phosphate, calcined     Carborundum   Phosphate rock, uncalcined     Cement   Pig iron     Cement clinkers   Potash     Chrome Ore   Potassium Sulphate     Chrome Ore   Potassium sulphate     Chrome Pellets   Pumice     Colemanite   Quartz     Copper granules   Quartzite     Copper granules   Quartzite     Copper matte   Salt cake     Felspar lump   Salt cake     Ferrochrome, exothermic   Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)     Ferromanganese   Seed cake (non-hazardous)     Ferronickel   Stainless steel grinding dust		
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Chrome OrePotassium sulphateChrome pelletsPumiceChromite Ore (Chromium Ore)Pyrite (containing copper and iron)ClayPyrite (containing copper and iron)Coke)PyrophylliteColemaniteQuartzCopper granulesQuartziteCopper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Cement clinkers	Potash
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Chromite Ore (Chromium Ore)ClayPyrite (containing copper and iron)Coke)PyrophylliteColemaniteQuartzCopper granulesQuartziteCopper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)FerronickelStainless steel grinding dust	Chrome Ore	Potassium sulphate
ClayPyrite (containing copper and iron)Coke)PyrophylliteColemaniteQuartzCopper granulesQuartziteCopper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Chrome pellets	Pumice
Coke)PyrophylliteColemaniteQuartzCopper granulesQuartziteCopper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Chromite Ore (Chromium Ore)	
ColemaniteQuartzCopper granulesQuartziteCopper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Clay	Pyrite (containing copper and iron)
Copper granulesQuartziteCopper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Coke)	Pyrophyllite
Copper matteRasorite (anhydrous)CryoliteRutile sandDiammonium phosphateSaltDolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Colemanite	Quartz
Cryolite   Rutile sand     Diammonium phosphate   Salt     Dolomite   Salt cake     Felspar lump   Salt rock     Ferrochrome   Sand (foundry, quartz, silica, potassium, felspar, soda felspar)     Ferrochrome, exothermic   Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)     Ferromanganese   Seed cake (non-hazardous)     Ferromanganese, exothermic   Soda ash (dense and light)     Ferronickel   Stainless steel grinding dust	Copper granules	Quartzite
Diammonium phosphate   Salt     Dolomite   Salt cake     Felspar lump   Salt rock     Ferrochrome   Sand (foundry, quartz, silica, potassium, felspar, soda felspar)     Ferrochrome, exothermic   Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)     Ferromanganese   Seed cake (non-hazardous)     Ferromanganese, exothermic   Soda ash (dense and light)     Ferronickel   Stainless steel grinding dust	Copper matte	Rasorite (anhydrous)
DolomiteSalt cakeFelspar lumpSalt rockFerrochromeSand (foundry, quartz, silica, potassium, felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Cryolite	Rutile sand
Felspar lump   Salt rock     Ferrochrome   Sand (foundry, quartz, silica, potassium, felspar, soda felspar)     Ferrochrome, exothermic   Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)     Ferromanganese   Seed cake (non-hazardous)     Ferromanganese, exothermic   Soda ash (dense and light)     Ferronickel   Stainless steel grinding dust	Diammonium phosphate	Salt
Ferrochrome   Sand (foundry, quartz, silica, potassium, felspar, soda felspar)     Ferrochrome, exothermic   Scrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)     Ferromanganese   Seed cake (non-hazardous)     Ferromanganese, exothermic   Soda ash (dense and light)     Ferronickel   Stainless steel grinding dust	Dolomite	Salt cake
felspar, soda felspar)Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Felspar lump	Salt rock
Ferrochrome, exothermicScrap metal (see also ferrous metal borings, shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Ferrochrome	
shavings, turnings or cuttings, group B)FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Ferrochrome, exothermic	
FerromanganeseSeed cake (non-hazardous)Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust		
Ferromanganese, exothermicSoda ash (dense and light)FerronickelStainless steel grinding dust	Ferromanganese	
Ferronickel Stainless steel grinding dust		Soda ash (dense and light)
	Ferronickel	
	Fertilizers without nitrates, non-hazardous	Stone chippings

Fishmeal (no-self heating properties)	Sugar (raw, raw brown, refined white)
Fly ash	Sulphate of potash and magnesium
Granulated slag	Superphosphate
Gypsum	Superphosphate, triple granular
Ilmenite sand	Taconite pellets
Iron ore	Talc
Iron ore pellets	Tapioca
Iron pyrites	Urea
Ironstone	Vermiculite
Labradorite	White quartz
Lead ore	Zircon sand

### **REFERENCES**:

SOLAS Regulation II-2/53.1

# **ATTACHMENTS:**

ANNEX to MSC/Circ. 1146

Kindest Regards, Cosmin Bozenovici Naval Architect – Conarina Technical Head Office