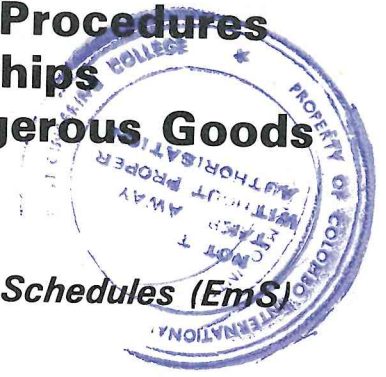


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IMD ✓
Hazardous substances
Transportation
Safety measures
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Schol 44

003174

Emergency Procedures for Ships Carrying Dangerous Goods



Group Emergency Schedules (EmS)

Procedures to be followed in case of incidents involving dangerous, hazardous or harmful substances, materials or articles

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Verification	
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In response to a request of the Maritime Safety Committee that advice on emergency procedures should be made available to those concerned with the carriage of dangerous goods, the Sub-Committee on the Carriage of Dangerous Goods has prepared group emergency schedules for the substances, materials and articles covered by the provisions of classes 1 to 9 of the International Maritime Dangerous Goods Code (IMDG Code).

The 1990 edition of the *IMO Emergency Procedures for Ships Carrying Dangerous Goods* (EmS) takes into account all amendments to the IMDG Code up to and including Amendment 25-89.

The Emergency Procedures will be further amended as and when necessary to reflect amendments made to the IMDG Code.

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ABBREVIATIONS

EmS	Emergency Schedule
IMDG Code	International Maritime Dangerous Goods Code
MFAG	Medical First Aid Guide for Use in Accidents Involving Dangerous Goods
UN No.	United Nations number assigned to dangerous goods most commonly carried
N.O.S.	Not otherwise specified

1. INTRODUCTION

1.1 Handling and transport of dangerous goods should be carried out by the safest means and with the greatest care in order to prevent incidents as well as contamination of other cargoes and the pollution of the environment.

1.2 It is essential that those involved in the handling and transport of dangerous goods should be advised beforehand as to the characteristics and hazardous properties of the goods and of any necessary safety precautions to be observed. They should also be provided with information about safety rules, first aid treatment, emergency procedures to be followed and action to be taken in case of an incident.

1.3 To provide masters with advice on the immediate action to be taken when such incidents occur, emergency procedures, which are grouped so that substances or articles with the same or similar emergency action appear on one emergency schedule (EmS), have been specially made available in the form of these recommendations.

1.4 For the purposes of the recommended emergency procedures, dangerous goods are those substances, materials and articles classified in accordance with chapter VII of the International Convention for the Safety of Life at Sea, 1974, as amended, (SOLAS 1974), and covered by the provisions of the International Maritime Dangerous Goods Code (IMDG Code).

1.5 The recommended emergency procedures and action refer to substances, materials and articles listed in the IMDG Code; they should be followed in conjunction with the information provided in the IMDG Code and the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG).

2. INDEX OF SUBSTANCES AND ARTICLES FOR EMERGENCY PROCEDURES

2.1 The General Index of Dangerous Goods of the IMDG Code has been adapted, for convenience, to include references to EmS numbers and MFAG Table numbers.

2.2 As the United Nations number (UN No.), which has already been assigned to virtually all dangerous goods carried by all modes of transport, will be used on shipping documents, an additional numerical index of

UN Nos. (Table of UN numbers with corresponding IMDG Code Page, EmS and MFAG Table numbers) is also included in the IMDG Code to ensure speedy reference to the IMDG Code Page No., the EmS No. and the MFAG Table No.

2.3 Underlined EmS Nos. indicate those substances, materials and articles for which the recommendations vary from the group schedule; such variations are specified under each EmS.

2.4 Examples of the entries for FORMIC ACID in the indexes are given hereunder:

GENERAL INDEX

SUBSTANCE or ARTICLE	IMDG CODE PAGE	UN No.	CLASS	Packaging Group	Subsidiary Risk Label(s)	EmS No.	MFAG Table No.
FORMIC ACID	8177	1779	8	II	-	<u>8-05</u>	700

NUMERICAL INDEX

UN No.	... 9	
177 .	8177	IMDG Code Page No.
	<u>8-05</u>	EmS No.
	700	MFAG Table No.

The numerical index has been compiled to enable users who know the UN number (UN No.) of a given substance, material or article to find the corresponding page in the IMDG Code, the Emergency Schedule (EmS) and the Medical First Aid Guide (MFAG) Table.

For the purposes of the numerical index, the UN No. has been broken down into two parts. The three-digit figures in the left-hand column of the index indicate the first three digits of the UN No. The single-digit figures shown in the top line of the index indicate the last digit of the UN No.

The numbers (Nos.) of the IMDG Code Page, the EmS and the MFAG Table where the information for a substance, material or article covered by a given UN No. appears will be found in the box at the intersection of the horizontal lines and the vertical column corresponding to the two parts of the UN No. as described above.

2.5 For substances and articles allocated to N.O.S. or other generic entries, the proper EmS number may vary with the properties of the hazardous constituent and as a consequence shippers may declare different numbers from those indicated in the IMDG Code if, to their knowledge, such numbers are more appropriate.

3. GROUP EMERGENCY SCHEDULES (EmS)

3.1 The schedules are divided into 5 sections, namely:

Section 1 — Group title with the emergency schedule number (EmS No.)

Section 2 — Special emergency equipment to be carried

Section 3 — Emergency procedures

Section 4 — Emergency action

Section 5 — First aid treatment

3.2 Section 1 — Group title and number

3.2.1 Various governments and organizations have prepared group texts for emergencies involving dangerous goods on land, but the circumstances at sea are so different that special emergency schedules for the sea mode are necessary. Ships' masters will be restricted by the special emergency equipment carried and their inability to call for additional assistance normally available to the land mode. It is, therefore, essential that the emergency procedures are simple and concise and afford the maximum safety for crews, and yet are phrased in such a way as to permit the master to use his discretion in interpreting the recommendations.

3.3 Section 2 — Special emergency equipment to be carried

3.3.1 In general, ships carrying dangerous goods should be equipped with a sufficient quantity of fully protective clothing, self-contained breathing apparatus, spray nozzles (preferably fire hoses fitted with approved dual purpose nozzles, i.e. spray/jet type incorporating a shutoff) and suitable

absorbent material. Whenever an EmS advises against the use of electrical handtools, this does not preclude the use of explosion-proof electric handtools.

3.3.2 Because of this, the EmS recommend essential equipment, other than items commonly carried and readily available on board ships. They are recommended so as to provide a quick checklist when dangerous goods are loaded.

3.3.3 Not all protective clothing is resistant to all dangerous goods and, therefore, the manufacturers' recommendations on suitability of clothing for use with particular substances should be obtained. Other materials of reasonable thickness do, however, afford a fair degree of protection, even if the material itself may be attacked by the dangerous substance. All contaminated clothing should be cleaned or disposed of safely.

3.3.4 Where a protection of the respiratory tract is necessary, self-contained breathing apparatus has been specified rather than gas masks as there are no internationally agreed standards for gas masks. However, masters are reminded that personnel will need regular training in the use of self-contained breathing apparatus, and that special attention should be taken to ensure that face masks fit satisfactorily at all times. This is particularly the case when dealing with incidents with highly toxic gases. It is not intended that competent authorities be precluded from agreeing to the provision of suitable gas masks, specifically for use with certain substances when loaded at ports under their jurisdiction.

3.3.5 Spray nozzles have been recommended in the EmS where appropriate; they should be provided in addition to those required by the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 1974) for use in machinery spaces.

3.3.6 There are many types of absorbent material available, some of which are inert, and others which react with certain dangerous substances. It is assumed that most ships will carry some absorbent materials such as sawdust; however, the EmS recommend in certain cases the provision of inert absorbent material e.g. diatomaceous earth, where normal absorbent material may react with the spilt substance. Although schedules indicate diatomaceous earth as an example, there may be other inert materials carried on board which could be equally as effective, particularly in fire situations involving substances reactive with water.

3.3.7 It is not possible to specify the quantity of each item of equipment required as this is dependent on the amount of dangerous goods carried, the size and type of ship and the number of crew available for emergency duties. Ultimately the decision on the quantity of each item of equipment must remain the responsibility of the ship's master.

3.4 Section 3 – Emergency procedures

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3.4.1 This section deals with any preparation by the emergency team prior to dealing with the incident. "Full protective clothing" comprises boots, coveralls, gloves, goggles and headgear. Where self-contained breathing apparatus is required for both spillage and fire situation, there will be no need for goggles; thus "protective clothing" comprises boots, coveralls, gloves and headgear.

3.4.2 Normally, dangerous goods in packaged form can be handled without the use of special protective equipment since the packaging is designed to contain the goods without spillage or leakage during transport. However, if the packaging has been damaged the contents may have spilt or leaked. Under these circumstances the emergency team may have to deal with toxic, corrosive or flammable solids, liquids or vapours. Such vapours may arise from a spilt substance or as a by-product of the reaction between spilt substances themselves and other materials. Eye protection should always be worn, and whenever hazardous dust is likely to be encountered, respiratory protection should also be used. Where a substance offers a significant toxic hazard when spilt, the general guidance is for the wearing of "protective clothing" and "self-contained breathing apparatus". Where a substance may offer only little inhalation hazard when spilt, e.g. some toxic solids, "full protective clothing" is recommended; the addition of "self-contained breathing apparatus" is generally recommended when dealing with a fire in the vicinity of such substances.

3.4.3 Certain substances emit toxic and/or corrosive gases, vapours or fumes when spilt. For such substances, it may be necessary to "turn the ship off wind". This is a matter for the master to decide, using his discretion, and depending on the weather conditions and other circumstances at the time of the incident, such as the extent of the spillage. The possible need for such action is indicated on certain EmS.

3.5 Section 4 – Emergency action

3.5.1 General

3.5.1.1 Recommendations on emergency action may differ depending on whether or not the goods are stowed "on deck" or "under deck" or whether a substance is gaseous, liquid or solid. When dealing with incidents involving flammable gases, or flammable liquids with a flashpoint of 61°C closed cup (c.c.) or below, all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools) should be avoided.

3.5.2 Spillages

3.5.2.1 In general, the recommendation is to wash spillages "on deck" overboard with copious quantities of water and, where there is likely to be a dangerous reaction with water, from as far away as practicable. Disposal of spilt dangerous goods overboard is a matter for judgement by the master, bearing in mind that the safety of the crew has priority over pollution of the sea. If it is safe to do so, spillages and leakages of substances, articles and materials identified in the IMDG Code as MARINE POLLUTANT should be collected for safe disposal. Absorbent material should be used for liquids.

3.5.2.2 Normally, the entry of personnel into any enclosed cargo space requires care in that a space which has remained closed for some time may have insufficient oxygen to support life. Toxic, corrosive and/or flammable vapours in "under deck" cargo spaces should, where possible, be dispersed before undertaking any emergency action. Where a mechanical ventilation system is used, care will be necessary to ensure that flammable vapours are not ignited. Entry into a cargo space should only be undertaken by trained personnel wearing self-contained breathing apparatus, and protective clothing when recommended, and always under the supervision of a responsible officer.

3.5.2.3 Spillages collected with absorbent material and kept in plastics bags or other receptacles may need to be stowed safely for ultimate disposal ashore. Collection of spillages with absorbent material "under deck" may not be fully effective, hence the foregoing precautions of entry into enclosed cargo spaces should be observed. A careful inspection for structural damage should be carried out after dealing with spillages of highly corrosive substances.

3.5.3 Fire

3.5.3.1 As water is the obvious fire-fighting medium at sea, it is generally recommended for most dangerous goods, even though on land for fire-fighting involving the same goods a non-water medium may be preferred. Where possible, a package should be removed from the vicinity of the fire. Where there is a possibility that heat will cause a chemical or physical change in the substance, or affect the integrity of a package, leading to rupture and dispersal of the contents, keeping the packages cool may limit the hazard. Care should be exercised with those substances liable to polymerize, as this reaction can continue long after the removal of external heat.

3.5.3.2 For incidents "under deck" the best course of fire fighting will usually be to batten down the hatch, exclude all ventilation and operate

the fixed fire-fighting installation. If such an installation is not fitted, then the action generally should be as for "on deck". In such cases, self-contained breathing apparatus should always be worn.

3.5.3.3 For certain substances which are highly reactive with water, only the use of dry chemical fire extinguishers is recommended. This would not preclude the use of suitable powdered inert material if available in sufficient quantity. The only alternative is the use of copious quantities of water, which will have a cooling effect on the fire, although reacting with the substance.

3.5.3.4 Where an EmS advises against the use of foam, this does not preclude the use of special foams.

3.5.3.5 The general fire-fighting recommendations for a number of dangerous goods suggest that they should be jettisoned if there is a likelihood of their involvement in a fire. Where full or nearly full container loads or other units are concerned, such a requirement may be impractical, in which case the requirement should be taken to indicate that the commodities are particularly dangerous and, should risk of involvement of fire arise, everything possible should be done to prevent the spread of fire to those containers. If, despite this, involvement of the containers or other units in question seems likely, it should be borne in mind that the contents may burn with explosive violence and personnel should be withdrawn accordingly.

3.6 Section 5 – First aid treatment

3.6.1 With regard to first aid treatment, reference is made on all EmS to the IMO Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG) and the index makes reference to the appropriate MFAG Table No., if any.

3.6.2 In the event of any dangerous substance coming into contact with the skin and particularly the eyes, then the affected areas should be immediately washed with copious quantities of water for 10 to 15 minutes.

3.7 Special notes on schedules

3.7.1 Where there are variations in the recommendations for specific substances, such variations are specified under each EmS.

4. EmS FOR CLASS 1 – INTRODUCTORY NOTES

4.1 Class 1 has the advantage that the criteria for assignment to the five divisions making up the class take full account of the behaviour of a substance or article in a fire. Therefore the division number is the basis for the grouping system for schedules on emergency procedures.

4.2 Many explosives will burn to the point of explosion and the main concern of a ship's master, when a fire involves goods of class 1, will be whether or not there is likely to be an explosion *en masse* resulting in loss of life or injury, and possibly leading to the sinking of the ship. If goods of division 1.1 or 1.5 are on board, the likelihood of an explosion *en masse* will exist. The time between fire reaching the explosives and the subsequent explosion *en masse* is of the order of seconds or minutes for substances or articles covered by EmS 1-01. The master should judge how long the fire has been close to the explosives and should ascertain how large a quantity of explosives is involved; a few kilograms could not sink the ship but above this quantity risks to the safety of personnel and the ship must be expected.

4.3 If none of the goods is in division 1.1 or 1.5 such risks are very unlikely and the master can, therefore, consider action to bring the emergency under control. Substances or articles in division 1.2 give rise to a projection hazard and fire fighting should, therefore, take place from behind substantial cover. The principal risk from goods in division 1.3 is heat radiation. Although the goods in division 1.4 produce isolated explosions, the effects are largely confined to the packages.

4.4 Neither exclusion of air nor the use of smothering agents is likely to be effective against fire involving goods of class 1.

4.5 If it is necessary to fight a fire in a cargo space containing goods of class 1, STEAM must NOT be used for smothering purposes. Various methods other than the use of steam may be effective to fight a fire in adjacent cargo in the same cargo space but only water can possibly be effective if the fire reaches the goods of class 1. The use of the largest possible quantities of water in the shortest possible time is the only means of preventing a rise in temperature that could affect the chemical stability of most of the goods of class 1. The use of water on spillage may in some cases be dangerous. When this is the case, a remark to this effect will be found under the EmS.

4.6 As some explosive substances are extremely sensitive to impact and friction, soft footwear, soft brushes and plastics trays have been recommended for the treatment of their spillages.

4.7 When goods of class 1 have been wetted, or immersed in water, in fighting a fire or through other causes, the master should seek advice as soon as possible from the consignor as to the safety of their condition.

4.8 If a cargo space contains explosives to which more than one EmS is applicable, the action corresponding to the greater hazard should be taken, i.e. the EmS with the smaller EmS number is applicable.

5. EmS FOR CLASS 2 – INTRODUCTORY NOTES

5.1 Gases are normally under pressure, varying from high pressure in the case of compressed permanent gases to low pressure in the case of deeply refrigerated gases. According to their chemical properties or physiological effects, which may vary widely, gases may be:

Non-flammable,

Flammable,

Poisonous (toxic),

Oxidizing agents (supporters of combustion),

Corrosive, or

may possess two or more of these properties simultaneously.

5.2 Some gases are chemically and physiologically inert. Such gases as well as other gases, normally accepted as non-toxic, will nevertheless be suffocating in high concentrations. Many gases have marked narcotic effects which may occur at comparatively low concentrations, or may evolve highly poisonous gases when involved in a fire.

5.3 Effective ventilation should be provided to remove any leakage of gas from within the cargo space or spaces, bearing in mind that some gases are heavier than air and may otherwise accumulate in dangerous concentrations in the lower part of the ship.

5.4 Measures should be taken to prevent leaking gases from penetrating into any other part of the ship.

5.5 If there is any reason to suspect leakage of gas, entry into cargo spaces or enclosed spaces should not be permitted until the master or a responsible officer has taken all safety considerations into account and is satisfied that it is safe to do so. Emergency entry under other circumstances should only be undertaken by trained personnel wearing self-contained

breathing apparatus, and protective clothing when recommended, and always under the supervision of a responsible officer.

5.6 Leakage from receptacles of flammable gases may give rise to explosive mixtures with air. Such mixtures, if ignited, may result in explosion and fire.

5.7 In the event of fire, receptacles containing gas should be liberally sprayed with water to keep them cool and whenever possible moved away from the seat of the fire or from dangerous areas. Acetylene cylinders which have been hot may explode even after they have cooled and should therefore be jettisoned.

5.8 When leaking gas from a receptacle catches fire, adjacent receptacles should, if possible, be removed to a safe distance or kept cool. An attempt should also be made to stop the gas leakage. It must be remembered that if a fire caused by the ignition of leaking gas is extinguished within a cargo space before the leak is stopped, accumulation of gas will occur resulting in an explosive mixture or a toxic or suffocating atmosphere.

5.9 When the leaking receptacle is on deck and the direction of the wind favours the safe dispersal of gas, the flames may be extinguished by normal methods. Otherwise the flames may be put out by means of:

- .1 a water spray when the internal gas pressure is high; or
- .2 jettisoning the receptacle.

6. *EmS FOR CLASS 3 – INTRODUCTORY NOTES*

6.1 If there is any reason to suspect leakage from packages containing flammable liquids, entry into the hold should be prohibited until the absence of toxic, narcotic or explosive mixtures of vapour and air has been assured. Emergency entry into the hold, when this assurance is not given, should only be made by persons wearing self-contained breathing apparatus.

6.2 Directing a jet of water onto a fire involving flammable liquids is unsuitable, whereas water as a fine spray can be very efficient.

6.3 Foam, which can be effective in many cases, provides a floating scum on the surface of the burning liquid and prevents the access of air. Where an EmS advises against the use of foam, this does not preclude the use of special foams if available.

7. *EmS FOR CLASS 4 – INTRODUCTORY NOTES*

7.1 Class 4.1 includes a number of wetted explosives which should not be allowed to dry out.

7.2 The use of carbon dioxide on burning metal powders is not recommended as it may increase the severity of combustion.

7.3 Class 4.3 contains many substances which are non-combustible when dry. Although these substances are dangerous when wet, in many cases the application of large quantities of water will extinguish the fire.

8. *EmS FOR CLASS 5 – INTRODUCTORY NOTES*

8.1 In the event of fire, substances of this class might sustain combustion even in a completely inert atmosphere. The prompt use of large quantities of water is the most effective means of fighting fire in these cargoes. Neither sealing off the hold nor the use of steam, carbon dioxide or other inert gas extinguishers is likely to be effective against fire.

8.2 Depending on the amount and nature of combustible impurities they may contain, substances in this class may explode when involved in a fire.

9. *EmS FOR CLASS 6 – INTRODUCTORY NOTES*

9.1 When dealing with substances of this class, it is particularly important that the emergency procedures are followed very closely as these take account of the type of toxicity involved and of any hazards resulting from flammability.

9.2 If flammable toxic liquids are involved in a fire, advice and guidance will also be found in the introductory notes to class 3.

10. *EmS FOR CLASS 7 – INTRODUCTORY NOTES*

10.1 For the transport of class 7 radioactive materials, protection against radiation exposure, heat and criticality are provided by the package design requirements, content limits, administrative controls and minimal operational controls, e.g. storage/stowage, loading etc.

10.2 Low specific activity (LSA) materials in group LSA-I and surface contaminated objects (SCO) in group SCO-I are assumed to be inherently safe as there is no possibility that under any circumstances arising during transport, sufficient amounts could be taken into the body so as to give rise to a significant internal radiation hazard: it is therefore possible, under appropriate conditions, for them to be carried unpackaged. Low specific activity materials in groups LSA-II and LSA-III and surface contaminated objects in group SCO-II have, respectively, higher limits of specific activity and surface contamination and may present higher radiation hazards, which requires them to be carried in suitable packaging. All the above groups may possess other hazardous properties.

10.3 Intermediate radioactive contents are transported in type A packages which are designed to prevent loss or dispersal of the radioactive contents and to retain their shielding under normal conditions of transport including rough handling. Content limitations ensure that in an incident the consequent hazard will not be severe if the appropriate precautions are followed as set out in the EmS.

10.4 Larger radioactive contents are transported in type B packages which are designed to limit the loss or dispersal of the radioactive contents and to retain their shielding under normal transport conditions and in severe accidents. Limits on the content of a specific type B packaging, specified in its approval certificate, take into account the nature of the material, heat dissipation and external radiation hazards.

10.5 Radioactive materials that are also fissile are transported in packages designed to prevent criticality with additional limitation on the number of packages in any one location and operational controls, where necessary.

10.6 Generally, it is not necessary to carry radiation monitors with the ship unless specifically required by the competent authorities concerned. However, for normal cargo carrying ships, it may be desirable that the ship's master should be in possession of information on the authorities to contact in an emergency, particularly in those ports at which he is likely to call.

10.7 The instructions are intended to apply to normal cargo ships; in the case of ships dedicated for the exclusive transport of radioactive materials, specific instructions will apply. Neither are they intended to apply in those cases where special instructions are specified.

10.8 Should spillage or damage occur to a package, the vessel should be checked for contamination by an expert at the next port of call and decontaminated if necessary.

10.9 Foodstuffs and drinking water which may have been contaminated as a result of accidents should not be consumed until they have been examined by qualified persons or appropriate advice has been obtained.

10.10 In the event of an accident involving damage to radioactive packages while a ship is in port, the port authorities should be informed. Procedures have been drawn up in many countries for summoning radiological assistance in any such emergency.

10.11 Shippers should indicate the appropriate EmS in the transport documents.

11. *EmS FOR CLASS 8 – INTRODUCTORY NOTES*

11.1 When dealing with substances of this class, it is particularly important that the emergency procedures are followed very closely as these take account of the effect of corrosive vapours and of any hazards resulting from flammability.

11.2 If flammable corrosive liquids are involved in a fire, advice and guidance will also be found in the introductory notes to class 3.

12. *EmS FOR CLASS 9 SUBSTANCES AND ARTICLES – INTRODUCTORY NOTES*

12.1 Class 9 substances and articles have been assigned to schedules applicable to other classes and consequently the action recommended for those classes should be followed.

INDEX OF EMERGENCY SCHEDULES

EmS No.	Emergency Schedule
1-01	Class 1, Division 1.1 Explosive substances and articles, which may detonate <i>en masse</i> in a short time in a fire
1-02	Class 1, Divisions 1.1 and 1.5 Explosive substances and articles, which may detonate <i>en masse</i> and which may evolve toxic fumes in a fire
1-03	Class 1, Division 1.1 Explosive substances and articles, which may detonate <i>en masse</i> in a fire
1-04	Class 1, Divisions 1.2 and 1.3 Explosive articles, with projection and/or severe fire hazard, and which may evolve hazardous vapours in an incident
1-05	Class 1, Divisions 1.2 and 1.3 Explosive articles with a projection and/or severe fire hazard
1-06	Class 1, Division 1.3 Explosive substances and articles, with severe fire hazard and which may evolve toxic fumes in a fire
1-07	Class 1, Division 1.4 Substances and articles with a small hazard but which may evolve toxic fumes in a fire
1-08	Class 1, Division 1.4 Articles with a small hazard
1-09	EmS deleted
2-01	Compressed gases, flammable; toxic; stowage "on deck only"
2-02	Compressed gases, flammable
2-03	Compressed gases, non-flammable; toxic and/or corrosive and/or oxidizing agents; stowage "on deck only"
2-04	Compressed gases, non-flammable, not covered by other schedules
2-05	Liquefied gases, flammable; highly toxic; stowage "on deck only"
2-06	Liquefied gases, flammable; toxic and/or corrosive
2-07	Liquefied gases, flammable
2-08	Liquefied gases, non-flammable; toxic and/or corrosive, and/or oxidizing agent

EmS No.	Emergency Schedule
2-09	Liquefied gases, non-flammable, not covered by other schedules
2-10	Deeply refrigerated liquefied gases, flammable
2-11	Deeply refrigerated liquefied gases, oxidizing agents
2-12	Deeply refrigerated liquefied gases, non-flammable, not covered by other schedules
2-13	Articles containing compressed or liquefied gases
2-14	EmS deleted
3-01	Class 3.1 Flammable liquids, flashpoint below -18°C c.c., toxic and/or corrosive; stowage "on deck only"
3-02	1 Class 3.1 Flammable liquids, flashpoint below -18°C c.c., toxic and/or corrosive; miscible with water* 2 Class 3.2 Flammable liquids, flashpoint -18°C to 23°C c.c., toxic and/or corrosive; miscible with water* 3 Class 3.3 Flammable liquids, flashpoint 23°C to 61°C c.c., toxic and/or corrosive; miscible with water*
3-03	1 Class 3.1 Flammable liquids, flashpoint below -18°C c.c., toxic and/or corrosive; immiscible with water 2 Class 3.2 Flammable liquids, flashpoint -18°C to 23°C c.c., toxic and/or corrosive; immiscible with water 3 Class 3.3 Flammable liquids, flashpoint 23°C to 61°C c.c., toxic and/or corrosive; immiscible with water
3-04	1 Class 3.1 Flammable liquids, flashpoint below -18°C c.c., reactive with water; corrosive and/or toxic 2 Class 3.2 Flammable liquids, flashpoint -18°C to 23°C c.c., reactive with water; corrosive and/or toxic 3 Class 3.3 Flammable liquids, flashpoint 23°C to 61°C c.c., reactive with water; corrosive and/or toxic
3-05	1 Class 3.1 Flammable liquids, flashpoint below -18°C c.c., flammable materials dissolved in flammable solvents

* Includes substances which are partially miscible with water and substances immiscible but reacting with water for which the use of foam may be ineffective.

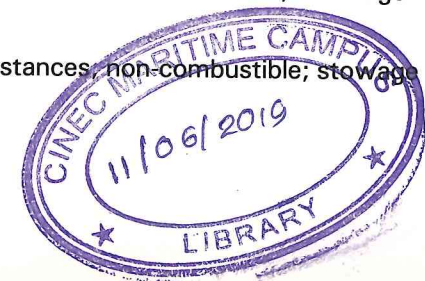
EmS No.	Emergency Schedule
3-05 (cont.)	2 Class 3.2 Flammable liquids, flashpoint -18°C to 23°C c.c., flammable materials dissolved in flammable solvents
	3 Class 3.3 Flammable liquids, flashpoint 23°C to 61°C c.c., flammable materials dissolved in flammable solvents
3-06	1 Class 3.1 Flammable liquids, flashpoint below -18°C c.c., not covered by other schedules; miscible with water*
	2 Class 3.2 Flammable liquids, flashpoint -18°C to 23°C c.c., not covered by other schedules; miscible with water*
	3 Class 3.3 Flammable liquids, flashpoint 23°C to 61°C c.c., not covered by other schedules; miscible with water*
3-07	1 Class 3.1 Flammable liquids, flashpoint below -18°C c.c., not covered by other schedules; immiscible with water
	2 Class 3.2 Flammable liquids, flashpoint -18°C to 23°C c.c., not covered by other schedules; immiscible with water
	3 Class 3.3 Flammable liquids, flashpoint 23°C to 61°C c.c., not covered by other schedules; immiscible with water
3-08	EmS deleted
4.1-01	Flammable solids, wetted, explosive when dry
4.1-02	Flammable solids, metal (powdered, pellets, turnings etc.)
4.1-03	Flammable solids, toxic and/or corrosive
4.1-04	Flammable solids carried in a molten state; stowage "on deck only"
4.1-05	Flammable solids, harmful
4.1-06	Flammable solids, not covered by other schedules
4.1-07	EmS deleted
4.1-08	Flammable solids, projection hazard
4.1-09	Flammable solids which decompose violently when heated

* Includes substances which are partially miscible with water and substances immiscible but reacting with water for which the use of foam may be ineffective.

EmS No.	Emergency Schedule
4.2-01	Spontaneously combustible substances, instantly pyrophoric in air; stowage "on deck only"
4.2-02	Spontaneously combustible substances, pyrophoric metals
4.2-03	Spontaneously combustible substances, white molten phosphorus; stowage "on deck only"
4.2-04	Spontaneously combustible substances, which may evolve hazardous vapours
4.2-05	Spontaneously combustible substances, not covered by other schedules
4.2-06	EmS deleted
4.2-07	Spontaneously combustible substances, plastics, nitrocellulose-based, not otherwise specified, stowage "on deck only"
4.2-08	Spontaneously combustible substances, sodium methylate and related substances
4.3-01	Substances dangerous when wet, violently reactive with water; stowage "on deck only"
4.3-02	Substances dangerous when wet, phosphides, water liberates toxic and/or flammable vapours
4.3-03	Substances dangerous when wet, non-combustible
4.3-04	Substances dangerous when wet, not covered by other schedules
4.3-05	Substances dangerous when wet, moderately reactive with water
4.3-06	Substances dangerous when wet, metal powders
4.3-07	EmS deleted
4.3-08	Substances dangerous when wet, not otherwise specified
5.1-01	Liquid oxidizing substances, toxic and/or corrosive, reacting violently with water; stowage "on deck only"
5.1-02	Liquid oxidizing substances, toxic and/or corrosive
5.1-03	Liquid oxidizing substances, not covered by other schedules

EmS No.	Emergency Schedule
5.1-04	Solid oxidizing substances, reacting violently with small quantities of water
5.1-05	Solid oxidizing substances, toxic and/or corrosive
5.1-06	Solid oxidizing substances, not covered by other schedules
5.1-07	EmS deleted
5.1-08	Ems deleted
5.1-09	Ammonium perchlorate
5.1-10	Oxidizing substances carried in a molten state, stowage "on deck only"
5.1-11	Oxidizing substances, not otherwise specified
5.2-01	Organic peroxides in packagings; stowage "on deck only"
5.2-02	Organic peroxides, temperature controlled, in packagings; stowage "on deck only"
5.2-03	Organic peroxides in IBCs; stowage "on deck only"
5.2-04	Organic peroxides in IBCs, temperature controlled; stowage "on deck only"
5.2-05	Organic peroxides in tanks; stowage "on deck only"
5.2-06	Organic peroxides in tanks, temperature controlled; stowage "on deck only"
6.1-01	Toxic liquids, including substances which may liquefy during transport, flammable, flashpoint 61°C c.c. or below
6.1-02	Toxic liquids, including substances which may liquefy during transport, not covered by other schedules
6.1-03	Toxic solids, flammable
6.1-04	Toxic solids, not covered by other schedules
6.1-05	Ems deleted
6.1-06	EmS deleted
6.1-07	Toxic substances, dangerous when wet

EmS No.	Emergency Schedule
6.1-08	Toxic substances, self-heating
6.2-01	EmS deleted
7-01	Radioactive materials, fissile, not otherwise specified, UN No. 2918 Radioactive materials, not otherwise specified, UN No. 2982 Radioactive materials, special form, not otherwise specified, transported in Type A or Type B packages, and packages for fissile material, UN No. 2974
7-02	Radioactive materials, low specific activity material (LSA), not otherwise specified, UN No. 2912 Radioactive materials, surface contaminated objects (SCO), UN No. 2913
7-03	Radioactive materials, uranium metal, pyrophoric (UN No. 2979) or thorium metal, pyrophoric (UN No. 2975); stowage "on deck only"
7-04	Radioactive materials, uranium hexafluoride, fissile (UN No. 2977) and uranium hexafluoride, fissile excepted or non-fissile (UN No. 2978)
7-05	Radioactive materials, thorium nitrate, solid (UN No. 2976) and uranyl nitrate, solid (UN No. 2981)
7-06	Radioactive materials, uranyl nitrate hexahydrate solution, UN No. 2980; stowage "on deck only"
7-07	Radioactive materials, excepted packages, UN No. 2910
7-08	EmS deleted
7-09	Radioactive materials, transported under special arrangement
8-01	Strong corrosive substances, flammable, flashpoint 61°C c.c. or below; stowage "on deck only"
8-02	Strong corrosive substances, combustible; stowage "on deck only"
8-03	Strong corrosive substances, non-combustible; stowage "on deck only"



EmS No.**Emergency Schedule**

8-04	Corrosive substances, flammable, flashpoint 61 °C c.c. or below
8-05	Corrosive substances, combustible
8-06	Corrosive substances, non-combustible
8-07	Mild corrosive substances, combustible
8-08	Mild corrosive substances, non-combustible
8-09	EmS deleted
8-10	Batteries
8-11	Hydrazine, hydrate or hydrazine aqueous solutions with not more than 64% hydrazine, by mass (UN No. 2030)
8-12	Gallium and mercury
8-13	Molten corrosive substances; stowage "on deck only"
8-14	EmS deleted
8-15	Corrosive substances, not covered by other schedules

CLASS 1**EMERGENCY SCHEDULE 1-01****CLASS 1, DIVISION 1.1**

EXPLOSIVE SUBSTANCES AND ARTICLES, WHICH MAY DETONATE *EN MASSE* IN A SHORT TIME IN A FIRE

Special Emergency Equipment to be carried

Soft footwear.
Soft brushes and plastics trays.

EMERGENCY PROCEDURES

Wear soft footwear when dealing with SPILLAGE or FIRE.

EMERGENCY ACTION

Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools, mechanical shock, friction).

*On deck**Under deck*

SPILLAGE	Keep wet. Wash spillage overboard with copious quantities of water.	Keep wet. Collect spillage, where practicable, using soft brushes and plastics trays, for safe disposal.
FIRE	Keep the packages wet. Remove packages likely to be involved. Use water jet from as far away as practicable. If this is impracticable, stay away, as mass explosion may occur in a very short time. In such a case consider abandoning ship.	Adopt action as for "On deck".

First Aid – See IMO Medical First Aid Guide (MFAG)

EMERGENCY SCHEDULE 1-02

CLASS 1, DIVISIONS 1.1 AND 1.5

EXPLOSIVE SUBSTANCES AND ARTICLES, WHICH MAY DETONATE *EN MASSE* AND WHICH MAY EVOLVE TOXIC FUMES IN A FIRE

Special Emergency Equipment to be carried	
Self-contained breathing apparatus. Soft footwear. Soft brushes and plastics trays.	
<i>EMERGENCY PROCEDURES</i>	
Wear soft footwear when dealing with SPILLAGE and additionally self-contained breathing apparatus when dealing with FIRE.	
<i>EMERGENCY ACTION</i>	
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools, mechanical shock, friction).	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE . Keep wet. Wash spillage overboard with copious quantities of water.	Keep wet. Collect spillage, where practicable, using soft brushes and plastics trays, for safe disposal.
FIRE Keep the packages wet. Remove packages likely to be involved. If the fire reaches the explosive, risk of mass explosion arises. In such a case consider abandoning ship.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

UN No.	Substance or Article	Remarks
0081	EXPLOSIVES, BLASTING TYPE A	Water may separate the nitroglycerin from the spillage; this nitroglycerin becomes very sensitive to shock and heat. If spillage under deck, keep it under water and seek advice for safe disposal from the shipper.
0143	NITROGLYCERIN, DESENSITIZED with not less than 40% non-volatile water-insoluble phlegmatizer, by mass	
0144	NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1% and not more than 10% nitroglycerin	

EMERGENCY SCHEDULE 1-03

CLASS 1, DIVISION 1.1

EXPLOSIVE SUBSTANCES AND ARTICLES, WHICH MAY DETONATE *EN MASSE* IN A FIRE

Special Emergency Equipment to be carried		
Soft footwear. Soft brushes and plastics trays.		
<i>EMERGENCY PROCEDURES</i>		
Wear soft footwear when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools, mechanical shock, friction).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Keep wet. Wash spillage overboard with copious quantities of water.	Keep wet. Collect spillage, where practicable, using soft brushes and plastics trays, for safe disposal.
FIRE	Keep the packages wet. Remove packages likely to be involved. If the fire reaches the explosive, risk of mass explosion arises. In such a case consider abandoning ship.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
0075	DIETHYLENEGLYCOL DINITRATE, DESENSITIZED	Water may separate the explosive component from spilt substance; this explosive component becomes very sensitive to shock and heat. If spillage under deck, keep it under water and seek advice from the shipper for safe disposal.

EMERGENCY SCHEDULE 1-04

CLASS 1, DIVISIONS 1.2 AND 1.3

EXPLOSIVE ARTICLES, WITH PROJECTION AND/OR SEVERE FIRE HAZARD, AND WHICH MAY EVOLVE HAZARDOUS VAPOURS IN AN INCIDENT

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 when dealing with SPILLAGE or FIRE.		
EMERGENCY ACTION		
	On deck	Under deck
SPILLAGE	Sweep or pick up articles. Keep wet. Wash spillage overboard with copious quantities of water.	Keep wet. Collect spillage, where practicable, for safe disposal.
FIRE	Cool the articles or packages with water and remove them if possible. Fight fire with water jet from safe position, as far away as practicable. Articles having been exposed to fire must be kept separated from unexposed articles.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 1-05

CLASS 1, DIVISIONS 1.2 AND 1.3

EXPLOSIVE ARTICLES WITH A PROJECTION AND/OR SEVERE FIRE HAZARD

Special Emergency Equipment to be carried		
Nil		
EMERGENCY PROCEDURES		
Nil		
EMERGENCY ACTION		
	On deck	Under deck
SPILLAGE	Sweep or pick up articles.	Adopt action as for "On deck"
FIRE	Cool the articles or packages with water and remove them if possible. Fight fire with water jet from safe position, as far away as practicable. Articles having been exposed to fire must be kept separated from unexposed articles.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 1-06

CLASS 1, DIVISION 1.3

EXPLOSIVE SUBSTANCES AND ARTICLES, WITH SEVERE FIRE HAZARD AND WHICH MAY EVOLVE TOXIC FUMES IN A FIRE

Special Emergency Equipment to be carried		
Self-contained breathing apparatus. Soft footwear. Soft brushes and plastics trays.		
<i>EMERGENCY PROCEDURES</i>		
Wear soft footwear when dealing with SPILLAGE and additionally self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools, mechanical shock, friction).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Sweep or pick up articles. Keep wet. Wash spillage overboard with copious quantities of water.	Keep wet. Collect spillage, where practicable, using soft brushes and plastics trays, for safe disposal.
FIRE	Cool the articles or packages with water and remove them if possible. Fight fire with water jet from safe position, as far away as practicable. Articles having been exposed to fire must be kept separated from unexposed articles.	If circumstances permit, keep hatches open to prevent the building up of pressure. Otherwise, adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 1-07

CLASS 1, DIVISION 1.4

SUBSTANCES AND ARTICLES WITH A SMALL HAZARD BUT WHICH MAY EVOLVE TOXIC FUMES IN A FIRE

Special Emergency Equipment to be carried		
Self-contained breathing apparatus.		
<i>EMERGENCY PROCEDURES</i>		
Wear self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Sweep or pick up articles.	Adopt action as for "On deck".
FIRE	Cool the articles or packages with water and remove them if possible. Fight fire with water.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 1-08

CLASS 1, DIVISION 1.4

ARTICLES WITH A SMALL HAZARD

Special Emergency Equipment to be carried	
Nil	
<i>EMERGENCY PROCEDURES</i>	
Nil	
<i>EMERGENCY ACTION</i>	
	<i>On deck</i> <i>Under deck</i>
SPILLAGE	Sweep or pick up articles. Adopt action as for "On deck".
FIRE	Cool the articles or packages with water and remove them if possible. Fight fire with water. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

UN No.	Substance or Article	Remarks
0255	DETONATORS, ELECTRIC for blasting	} Fight fire from a protected position.
0257	FUZES, DETONATING	
0267	DETONATORS, NON-ELECTRIC for blasting	
0348	CARTRIDGES FOR WEAPONS, with bursting charge	
0361	DETONATOR ASSEMBLIES, NON-ELECTRIC, for blasting	
0365	DETONATORS FOR AMMUNITION	
0383	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	
0410	FUZES, DETONATING, with protective features	
0427	PROJECTILES with burster or expelling charge	
0452	GRENADES, PRACTICE, hand or rifle	
0453	ROCKETS, LINE-THROWING	

EMERGENCY SCHEDULE 1-09

EmS DELETED

RESERVED

CLASS 2

EMERGENCY SCHEDULE 2-01

COMPRESSED GASES, FLAMMABLE; TOXIC; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried

Self-contained breathing apparatus.
Spray nozzles.

EMERGENCY PROCEDURES

Wear self-contained breathing apparatus when dealing with SPILLAGE or FIRE.

EMERGENCY ACTION

Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).

Turn ship off wind.

	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable.	Not applicable.
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Not applicable.

First Aid – See IMO Medical First Aid Guide (MFAG)

EMERGENCY SCHEDULE 2-02

COMPRESSED GASES, FLAMMABLE

Special Emergency Equipment to be carried		
Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Nil		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable.	Provide adequate ventilation. Stop leak if practicable.
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 2-03

COMPRESSED GASES, NON-FLAMMABLE; TOXIC AND/OR CORROSIVE AND/OR OXIDIZING AGENTS; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable.	Not applicable.
FIRE	Keep receptacles cool with water spray. Remove undamaged cooled receptacles to a safe place.	Not applicable.
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1045	FLUORINE, COMPRESSED	} Avoid contact with oil and all combustible materials so as to prevent spontaneous combustion or explosion.
1660	NITRIC OXIDE	
2190	OXYGEN DIFLUORIDE	
2451	NITROGEN TRIFLUORIDE	

EMERGENCY SCHEDULE 2-04

COMPRESSED GASES, NON-FLAMMABLE, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried		
Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Nil		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable.	Provide adequate ventilation. Stop leak if practicable.
FIRE	Keep receptacles cool with water spray. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1072	OXYGEN, COMPRESSED	Avoid contact with oil and all combustible materials so as to prevent spontaneous combustion or explosion.

EMERGENCY SCHEDULE 2-05

LIQUEFIED GASES, FLAMMABLE; HIGHLY TOXIC; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate, but keep clear.	Not applicable.
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Not applicable.
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 2-06

LIQUEFIED GASES, FLAMMABLE; TOXIC AND/OR CORROSIVE

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate, but keep clear.	Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate, but keep clear.
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 2-07

LIQUEFIED GASES, FLAMMABLE

Special Emergency Equipment to be carried		
Protective gloves. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all skin contact. Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate.	Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate.
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1001	ACETYLENE, DISSOLVED	Care! Heated receptacles should be jettisoned as possible explosion hazard.

EMERGENCY SCHEDULE 2-08

LIQUEFIED GASES, NON-FLAMMABLE; TOXIC AND/OR CORROSIVE, AND/OR OXIDIZING AGENT

Special Emergency Equipment to be carried			
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.			
EMERGENCY PROCEDURES			
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.			
EMERGENCY ACTION			
Turn ship off wind.			
	<i>On deck</i>		
	<i>Under deck</i>		
SPILLAGE	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Stop leak if practicable. Let spilt liquid evaporate, but keep clear.</td> <td style="width: 50%; border: none;">Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate, but keep clear.</td> </tr> </table>	Stop leak if practicable. Let spilt liquid evaporate, but keep clear.	Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate, but keep clear.
Stop leak if practicable. Let spilt liquid evaporate, but keep clear.	Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate, but keep clear.		
FIRE	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.</td> <td style="width: 50%; border: none;">Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".</td> </tr> </table>	Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".		
First Aid – See IMO Medical First Aid Guide (MFAG)			

UN No.	Substance or Article	Remarks
1005	AMMONIA, ANHYDROUS, LIQUEFIED or AMMONIA SOLUTIONS, with more than 50% ammonia	Wash spillages of solutions overboard with copious quantities of water.
1017	CHLORINE	Avoid contact with oil and all combustible materials so as to prevent spontaneous combustion or explosion.

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(continued)

UN No.	Substance or Article	Remarks
1043	FERTILIZER AMMONIATING SOLUTION, with free ammonia	Wash spillages of solutions overboard with copious quantities of water.
1067	DINITROGEN TETROXIDE, LIQUEFIED	} Avoid contact with oil and all combustible materials so as to prevent spontaneous combustion or explosion.
1070	NITROUS OXIDE, COMPRESSED	
1749	CHLORINE TRIFLUORIDE	
1975	NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURES	
2073	AMMONIA SOLUTIONS, with more than 35% but not more than 50% ammonia	Wash spillages of solutions overboard with copious quantities of water.
2421	NITROGEN TRIOXIDE	} Avoid contact with oil and all combustible materials so as to prevent spontaneous combustion or explosion.
2548	CHLORINE PENTAFLUORIDE	
2901	BROMINE CHLORIDE	

EMERGENCY SCHEDULE 2-09

LIQUEFIED GASES, NON-FLAMMABLE, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried		
Protective gloves. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all skin contact.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate.	Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate.
FIRE	Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 2-10

DEEPLY REFRIGERATED LIQUEFIED GASES, FLAMMABLE

Special Emergency Equipment to be carried		
Suitable protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear suitable protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Due to low temperature, SPILLAGE may damage ship's construction. Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Avoid spraying water on spilt liquid.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate.	Provide adequate ventilation. Adopt action as for "On deck".
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1966	HYDROGEN, REFRIGERATED LIQUID	Flames may be invisible.

EMERGENCY SCHEDULE 2-11

DEEPLY REFRIGERATED LIQUEFIED GASES, OXIDIZING AGENTS

Special Emergency Equipment to be carried		
Suitable protective gloves and goggles. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear suitable protective gloves and goggles when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Due to low temperature, SPILLAGE may damage ship's construction. Avoid all skin contact. Avoid contact with oil and all combustible materials so as to prevent spontaneous combustion or explosion. Avoid spraying water on spilt liquid.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate.	Provide adequate ventilation. Adopt action as for "On deck".
FIRE	Use water spray from as far away as practicable. Do <i>NOT</i> use water jets. Keep undamaged receptacles cool with copious quantities of water.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

008174

EMERGENCY SCHEDULE 2-12

DEEPLY REFRIGERATED LIQUEFIED GASES, NON-FLAMMABLE, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried		
Suitable protective gloves. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear suitable protective gloves and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Due to low temperature, SPILLAGE may damage ship's construction. Avoid all skin contact. Avoid spraying water on spilt liquid.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable. Let spilt liquid evaporate.	Provide adequate ventilation. Stop leak if practicable. Let spilt liquid evaporate.
FIRE	Use water spray, foam or dry chemical from as far away as practicable. Keep adjacent receptacles cool with copious quantities of water. Remove undamaged cooled receptacles to a safe place.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 2-13

ARTICLES CONTAINING COMPRESSED OR LIQUEFIED GASES

Special Emergency Equipment to be carried		
Protective gloves and goggles. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and goggles when dealing with SPILLAGE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect and repack undamaged receptacles. Collect damaged receptacles for safe disposal.	Collect and repack undamaged receptacles. Collect damaged receptacles for safe disposal.
FIRE	Use water spray from as many hoses as possible from as far away as practicable. Keep adjacent receptacles cool.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 2-14

EmS DELETED

RESERVED

CLASS 3

EMERGENCY SCHEDULE 3-01

CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW - 18°C c.c., TOXIC AND/OR CORROSIVE; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried

Protective clothing (gloves, boots, coveralls, headgear).
Self-contained breathing apparatus.
Spray nozzles.

EMERGENCY PROCEDURES

Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.

EMERGENCY ACTION

Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).

Turn ship off wind.

On deck

Under deck

SPILLAGE	Wash spillage overboard with copious quantities of water.	Not applicable.
FIRE	Use water spray, foam or dry chemical. Do <i>NOT</i> use water jet. If possible remove receptacles likely to be involved or keep them cool with copious quantities of water.	Not applicable.

First Aid - See IMO Medical First Aid Guide (MFAI)

EMERGENCY SCHEDULE 3-02

- 1 CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW - 18°C c.c.,
TOXIC AND/OR CORROSIVE; MISCIBLE WITH WATER*
- 2 CLASS 3.2 FLAMMABLE LIQUIDS, FLASHPOINT - 18°C TO 23°C c.c.,
TOXIC AND/OR CORROSIVE; MISCIBLE WITH WATER*
- 3 CLASS 3.3 FLAMMABLE LIQUIDS, FLASHPOINT 23°C TO 61°C c.c.,
TOXIC AND/OR CORROSIVE; MISCIBLE WITH WATER*

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.	Provide adequate ventilation. Collect spillage, where practicable, using absorbent material, for safe disposal.
FIRE	Use water spray or dry chemical. Do <i>NOT</i> use water jet or foam. If possible remove receptacles likely to be involved or keep them cool with copious quantities of water.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid - See IMO Medical First Aid Guide (MFAG)		

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* Includes substances which are partially miscible with water and substances immiscible but reacting with water for which the use of foam may be ineffective.

(continued)

UN No.	Substance or Article	Remarks
2029	HYDRAZINE, ANHYDROUS or HYDRAZINE AQUEOUS SOLUTIONS with more than 64% hydrazine, by mass.	Possible self-ignition at ambient temperatures.

EMERGENCY SCHEDULE 3-03

- 1 CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW -18°C c.c., TOXIC AND/OR CORROSIVE; IMMISCIBLE WITH WATER
- 2 CLASS 3.2 FLAMMABLE LIQUIDS, FLASHPOINT -18°C TO 23°C c.c., TOXIC AND/OR CORROSIVE; IMMISCIBLE WITH WATER
- 3 CLASS 3.3 FLAMMABLE LIQUIDS, FLASHPOINT 23°C TO 61°C c.c., TOXIC AND/OR CORROSIVE; IMMISCIBLE WITH WATER

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.	Provide adequate ventilation. Collect spillage, where practicable, using absorbent material, for safe disposal.
FIRE	Use water spray, foam or dry chemical. Do <i>NOT</i> use water jet. If possible remove receptacles likely to be involved or keep them cool with copious quantities of water.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid - See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
Various	N.O.S. entries, see the General Index of the IMDG Code.	Foam may be ineffective.

EMERGENCY SCHEDULE 3-04

- 1 CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW -18°C c.c., REACTIVE WITH WATER; CORROSIVE AND/OR TOXIC
- 2 CLASS 3.2 FLAMMABLE LIQUIDS, FLASHPOINT -18°C TO 23°C c.c., REACTIVE WITH WATER; CORROSIVE AND/OR TOXIC
- 3 CLASS 3.3 FLAMMABLE LIQUIDS, FLASHPOINT 23°C TO 61°C c.c., REACTIVE WITH WATER; CORROSIVE AND/OR TOXIC

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Dry chemical.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Use of water on substance may cause violent reaction. Collect spillage, where practicable, using absorbent material and dispose of overboard in a safe manner. Wash remainder overboard with copious quantities of water.	Provide adequate ventilation. Collect spillage, where practicable, using absorbent material, for safe disposal.
FIRE	Use dry chemical. If possible remove receptacles likely to be involved.	Batten down; use ship's fixed fire-fighting installation (not water). Otherwise adopt action as for "On deck".
First Aid - See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 3-05

- 1 CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW -18°C c.c.,
FLAMMABLE MATERIALS DISSOLVED IN FLAMMABLE SOLVENTS
- 2 CLASS 3.2 FLAMMABLE LIQUIDS, FLASHPOINT -18°C TO 23°C c.c.,
FLAMMABLE MATERIALS DISSOLVED IN FLAMMABLE SOLVENTS
- 3 CLASS 3.3 FLAMMABLE LIQUIDS, FLASHPOINT 23°C TO 61°C c.c.,
FLAMMABLE MATERIALS DISSOLVED IN FLAMMABLE SOLVENTS

Special Emergency Equipment to be carried	
Protective gloves and boots. Self-contained breathing apparatus. Spray nozzles.	
<i>EMERGENCY PROCEDURES</i>	
Wear protective gloves and boots and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.	
<i>EMERGENCY ACTION</i>	
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE Collect spillage where practicable using absorbent material and dispose of overboard in a safe manner.	Provide adequate ventilation. Collect spillage, where practicable, using absorbent material, for safe disposal.
FIRE Use water spray or dry chemical. Do <i>NOT</i> use water jet. Keep adjacent receptacles cool with copious quantities of water.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid - See IMO Medical First Aid Guide (MFAI)	

UN No.	Substance or Article	Remarks
1266	PERFUMERY PRODUCTS, with flammable solvents	Self-contained breathing apparatus not necessary - use goggles for eye protection.

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UN No.	Substance or Article	Remarks
1287	RUBBER SOLUTION	} Self-contained breathing apparatus not necessary - use goggles for eye protection. In fire situation, use water spray.
1866	RESIN SOLUTION, flammable	
2059	NITROCELLULOSE SOLUTION, FLAMMABLE	

EMERGENCY SCHEDULE 3-06

- 1 CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW - 18°C c.c.,
NOT COVERED BY OTHER SCHEDULES; MISCIBLE WITH WATER*
- 2 CLASS 3.2 FLAMMABLE LIQUIDS, FLASHPOINT - 18°C TO 23°C c.c.,
NOT COVERED BY OTHER SCHEDULES; MISCIBLE WITH WATER*
- 3 CLASS 3.3 FLAMMABLE LIQUIDS, FLASHPOINT 23°C TO 61°C c.c.,
NOT COVERED BY OTHER SCHEDULES; MISCIBLE WITH WATER*

Special Emergency Equipment to be carried		
Protective gloves and boots. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and boots, and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.	Provide adequate ventilation. Collect spillage, where practicable, using absorbent material, for safe disposal.
FIRE	Use water spray or dry chemical. Do <i>NOT</i> use water jet or foam. If possible remove receptacles likely to be involved or keep them cool with copious quantities of water.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid - See IMO Medical First Aid Guide (MFAG)		

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* Includes substances which are partially miscible with water and substances immiscible but reacting with water for which the use of foam may be ineffective.

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UN No.	Substance or Article	Remarks
1172	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE	} Self-contained breathing apparatus not necessary - use goggles for eye protection.
1189	ETHYLENE GLYCOL MONOMETHYL ETHER ACETATE	
1204	NITROGLYCERIN SOLUTION IN ALCOHOL	
1261	NITROMETHANE	Water may separate the nitroglycerin from the spillage; this nitroglycerin becomes very sensitive to shock and heat. If spillage under deck, keep it under water and seek advice for safe disposal from the shipper. In fire, explosion hazard.
2275	2-ETHYLBUTANOL	} Self-contained breathing apparatus not necessary - use goggles for eye protection.
2620	AMYL BUTYRATES	
3064	NITROGLYCERIN SOLUTION IN ALCOHOL	Water may separate the nitroglycerin from the spillage; this nitroglycerin becomes very sensitive to shock and heat. If spillage under deck, keep it under water and seek advice for safe disposal from the shipper.

EMERGENCY SCHEDULE 3-07

- 1 CLASS 3.1 FLAMMABLE LIQUIDS, FLASHPOINT BELOW - 18°C c.c.,
NOT COVERED BY OTHER SCHEDULES; IMMISCIBLE WITH WATER
- 2 CLASS 3.2 FLAMMABLE LIQUIDS, FLASHPOINT - 18°C TO 23°C c.c.,
NOT COVERED BY OTHER SCHEDULES; IMMISCIBLE WITH WATER
- 3 CLASS 3.3 FLAMMABLE LIQUIDS, FLASHPOINT 23°C TO 61°C c.c.,
NOT COVERED BY OTHER SCHEDULES; IMMISCIBLE WITH WATER

Special Emergency Equipment to be carried		
Protective gloves and boots. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and boots and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.	Provide adequate ventilation. Collect spillage, where practicable, using absorbent material, for safe disposal.
FIRE	Use water spray, foam or dry chemical. Do <i>NOT</i> use water jet. If possible remove receptacles likely to be involved or keep them cool with copious quantities of water.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid - See IMO Medical First Aid Guide (MFAG)		

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UN No.	Substance or Article	Remarks
Various	N.O.S. entries, see the General Index of the IMDG Code	Foam may be ineffective.
1177	2-ETHYLBUTYL ACETATE	Self-contained breathing apparatus not necessary - use goggles for eye protection.
1222	ISOPROPYL NITRATE	In fire, explosion hazard.
1272	PINE OIL	Self-contained breathing apparatus not necessary - use goggles for eye protection.
1308	ZIRCONIUM SUSPENDED IN A FLAMMABLE LIQUID	Spillage is liable to self-ignition. Use water spray from as many hoses as possible from as far away as practicable. See also EmS 4.2-02.
1865	normal-PROPYL NITRATE	In fire, explosion hazard.
2244	CYCLOPENTANOL	} Self-contained breathing apparatus not necessary - use goggles for eye protection.
2330	normal-UNDECANE	
2345	3-BROMOPROPYNE	In fire, explosion hazard. Fight fire from a protected position.
2749	TETRAMETHYLSILANE	Possible self-ignition at ambient temperatures.

EmS DELETED

FLAMMABLE SOLIDS, WETTED, EXPLOSIVE WHEN DRY

Special Emergency Equipment to be carried

Self-contained breathing apparatus.
 Spray nozzles.
 Soft brushes and plastics trays.

EMERGENCY PROCEDURES

Wear self-contained breathing apparatus when dealing with FIRE.

EMERGENCY ACTION

On deck

Under deck

SPILLAGE	Keep spillage wet. Wash overboard with copious quantities of water.	Keep spillage wet. Collect where practicable, using soft brushes and plastics trays, for safe disposal.
FIRE	Use water spray. Remove packages likely to be involved in a fire. If a substance dries out fire may cause an explosion.	Adopt action as for "On deck".

First Aid – See IMO Medical First Aid Guide (MFAG)

EMERGENCY SCHEDULE 4.1-02

FLAMMABLE SOLIDS, METAL (POWDERED, PELLETS, TURNINGS etc.)

Special Emergency Equipment to be carried			
Full protective clothing (gloves, boots, coveralls, headgear, goggles). Spray nozzles. Inert material (e.g. diatomaceous earth).			
<i>EMERGENCY PROCEDURES</i>			
Wear full protective clothing when dealing with FIRE.			
<i>EMERGENCY ACTION</i>			
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).			
<i>On deck</i>	<i>Under deck</i>		
SPILLAGE	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Wash spillage overboard with copious quantities of water.</td> <td style="width: 50%; border: none;">Collect spillage, where practicable, using damp, inert material and dispose of overboard in a safe manner.</td> </tr> </table>	Wash spillage overboard with copious quantities of water.	Collect spillage, where practicable, using damp, inert material and dispose of overboard in a safe manner.
Wash spillage overboard with copious quantities of water.	Collect spillage, where practicable, using damp, inert material and dispose of overboard in a safe manner.		
FIRE	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Use of water on burning surface will cause violent reaction but will eventually extinguish fire. Substance may burn fiercely. For small fires use inert material. For larger fires use water sprays from as many hoses as possible from as far away as practicable.</td> <td style="width: 50%; border: none;">Adopt action as for "On deck".</td> </tr> </table>	Use of water on burning surface will cause violent reaction but will eventually extinguish fire. Substance may burn fiercely. For small fires use inert material. For larger fires use water sprays from as many hoses as possible from as far away as practicable.	Adopt action as for "On deck".
Use of water on burning surface will cause violent reaction but will eventually extinguish fire. Substance may burn fiercely. For small fires use inert material. For larger fires use water sprays from as many hoses as possible from as far away as practicable.	Adopt action as for "On deck".		
First Aid – See IMO Medical First Aid Guide (MFAG)			

EMERGENCY SCHEDULE 4.1-03

FLAMMABLE SOLIDS, TOXIC AND/OR CORROSIVE

Special Emergency Equipment to be carried			
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.			
<i>EMERGENCY PROCEDURES</i>			
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.			
<i>EMERGENCY ACTION</i>			
<i>On deck</i>	<i>Under deck</i>		
SPILLAGE	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Wash spillage overboard with copious quantities of water.</td> <td style="width: 50%; border: none;">Collect spillage, where practicable and dispose of overboard in a safe manner.</td> </tr> </table>	Wash spillage overboard with copious quantities of water.	Collect spillage, where practicable and dispose of overboard in a safe manner.
Wash spillage overboard with copious quantities of water.	Collect spillage, where practicable and dispose of overboard in a safe manner.		
FIRE	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Use water spray.</td> <td style="width: 50%; border: none;">Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".</td> </tr> </table>	Use water spray.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
Use water spray.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".		
First Aid – See IMO Medical First Aid Guide (MFAG)			

UN No.	Substance or Article	Remarks
2925	FLAMMABLE SOLIDS, CORROSIVE, N.O.S.	Turn ship off wind.
2989	LEAD PHOSPHITE DIBASIC	Carbon dioxide may be ineffective.

EMERGENCY SCHEDULE 4.1-04

FLAMMABLE SOLIDS CARRIED IN A MOLTEN STATE; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles. Inert material.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Stop leak if practicable using cold water. Contain molten products if practicable using inert material. Collect solid material for safe disposal.	Not applicable.
FIRE	Use water spray from as far away as practicable.	Not applicable.
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 4.1-05

FLAMMABLE SOLIDS, HARMFUL

Special Emergency Equipment to be carried		
Protective gloves and coveralls. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and coveralls when dealing with SPILLAGE and additionally self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage and dispose of overboard in a safe manner.	Collect spillage, where practicable and dispose of overboard in a safe manner.
FIRE	Use water spray.	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
2956	5-tertiary-BUTYL-2,4,6- -TRINITRO-meta-XYLENE	In fire, explosion hazard. Fight fire from protected position.

EMERGENCY SCHEDULE 4.1-06

FLAMMABLE SOLIDS, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried	
Self-contained breathing apparatus. Spray nozzles.	
<i>EMERGENCY PROCEDURES</i>	
Wear self-contained breathing apparatus when dealing with FIRE.	
<i>EMERGENCY ACTION</i>	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage and repack if practicable; otherwise wash overboard using copious quantities of water.
FIRE	Use water spray.
	Collect spillage and repack if practicable.
	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

UN No.	Substance or Article	Remarks
2907	ISOSORBIDE DINITRATE MIXTURE with not less than 60% lactose, mannose, starch or calcium hydrogen phosphate	Do not repack spillage. Keep dry, collect and dispose of overboard in a safe manner.
3090	LITHIUM BATTERIES	} In fire, explosion hazard. Fight fire from a protected position.
3091	LITHIUM BATTERIES CONTAINED IN EQUIPMENT	

EMERGENCY SCHEDULE 4.1-07

EmS DELETED

EMERGENCY SCHEDULE 4.1-08

FLAMMABLE SOLIDS, PROJECTION HAZARD

Special Emergency Equipment to be carried		
NIL		
<i>EMERGENCY PROCEDURES</i>		
NIL		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Sweep or pick up articles.	Adopt action as for "On deck".
FIRE	Cool the articles or packages with water and remove them if possible. Fight fire with water jet from safe position, as far away as practicable. Articles having been exposed to fire must be kept separated from unexposed articles.	Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 4.1-09

FLAMMABLE SOLIDS WHICH DECOMPOSE VIOLENTLY WHEN HEATED

Special Emergency Equipment to be carried		
Protective gloves, goggles. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and goggles when dealing with SPILLAGE. Wear protective gloves and self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Do not absorb or repack. Wash spillage overboard with copious quantities of water.	Keep spillage wet, collect where practicable and dispose of overboard in a safe manner.
FIRE	Use water spray from protected position. If possible remove receptacles likely to be involved or keep cool with copious quantities of water.	Ship's fixed fire-fighting installation may not be effective. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
2952	AZODIISOBUTYRONITRILE	} Jettison leaking receptacles. If emergency temperature is exceeded, jettison receptacles or contents.
2953	2,2'-AZODI-(2,4-DIMETHYL-VALERONITRILE)	
2955	2,2'-AZODI-(2,4-DIMETHYL-4-METHOXYVALERONITRILE)	
3030	2,2'-AZODI-(2-METHYLBUTYRONITRILE)	

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UN No.	Substance or Article	Remarks
3035	3-(2-HYDROXYETHOXY)-4-PYRROLIDIN-1-YLBENZENEDIAZONIUM ZINC CHLORIDE	If emergency temperature is exceeded, jettison receptacles or contents.
3037	4-[BENZYL(ETHYL)AMINO]-3-ETHOXYBENZENEDIAZONIUM ZINC CHLORIDE	
3038	4-[BENZYL(METHYL)AMINO]-3-ETHOXYBENZENEDIAZONIUM ZINC CHLORIDE	
3039	4-DIMETHYLAMINO-6-(2-DIMETHYLAMINOETHOXY)-TOLUENE-2-DIAZONIUM ZINC CHLORIDE	

EMERGENCY SCHEDULE 4.2-01

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, INSTANTLY PYROPHORIC IN AIR; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried

Protective clothing (gloves, boots, coveralls, headgear).
Self-contained breathing apparatus.
DRY inert material (e.g. diatomaceous earth) to be maintained as dry as possible in a suitable stow.

EMERGENCY PROCEDURES

Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.

EMERGENCY ACTION

Do not use water.

On deck

Under deck

SPILLAGE) Spillage results in a FIRE situation. Remove undamaged receptacles to a safe place, contain and smother with DRY inert material and dispose of overboard in a safe manner.) Not applicable.
FIRE		

First Aid – See IMO Medical First Aid Guide (MFAG)

EMERGENCY SCHEDULE 4.2-02

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, PYROPHORIC METALS

Special Emergency Equipment to be carried	
Full protective clothing (gloves, boots, coveralls, headgear, goggles). Spray nozzles. Inert material (e.g. diatomaceous earth).	
<i>EMERGENCY PROCEDURES</i>	
Wear full protective clothing when dealing with SPILLAGE or FIRE.	
<i>EMERGENCY ACTION</i>	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE } FIRE }	Substances may burn fiercely. Smother with inert material. Dispose of overboard in a safe manner. Remove undamaged receptacles to a safe place. For small fires, use inert material. For large fires, use water spray from as many hoses as possible from as far away as practicable. Dispose of remaining substance overboard in a safe manner. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

UN No.	Substance or Article	Remarks
2008	ZIRCONIUM POWDER, DRY	Jettison damaged receptacles.

EMERGENCY SCHEDULE 4.2-03

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, WHITE MOLTEN PHOSPHORUS;
STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried	
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles. Inert material.	
<i>EMERGENCY PROCEDURES</i>	
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.	
<i>EMERGENCY ACTION</i>	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE FIRE	Stop leak if practicable using cold water. Contain molten substance if practicable using inert material. Keep continuously wet and retain solidified substance for safe disposal. Use water spray.
Not applicable. Not applicable.	
First Aid – See IMO Medical First Aid Guide (MFAG)	

EMERGENCY SCHEDULE 4.2-04

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, WHICH MAY EVOLVE HAZARDOUS VAPOURS

Special Emergency Equipment to be carried	
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.	
<i>EMERGENCY PROCEDURES</i>	
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.	
<i>EMERGENCY ACTION</i>	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.
FIRE	Use water spray.
	Keep spillage wet and dispose of safely.
	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

UN No.	Substance or Article	Remarks
1381	PHOSPHORUS, WHITE or YELLOW	After dealing with the fire situation, treat immediately as for spillage.
3088	SELF-HEATING SUBSTANCES, SOLID, N.O.S., non-pyrophoric	} Fight fire from a safe distance.
3126	SELF-HEATING SUBSTANCES, SOLID, CORROSIVE, N.O.S.	
3128	SELF-HEATING SUBSTANCES, SOLID, POISONOUS, N.O.S.	

EMERGENCY SCHEDULE 4.2-05

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried	
Self-contained breathing apparatus.	
<i>EMERGENCY PROCEDURES</i>	
Wear self-contained breathing apparatus when dealing with FIRE.	
<i>EMERGENCY ACTION</i>	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage and dispose of overboard in a safe manner.
FIRE	Use water jets.
	Collect spillage, where practicable and dispose of in a safe manner.
	Batten down; use ship's fixed fire-fighting installation. Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

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SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, PLASTICS, NITROCELLULOSE-BASED, N.O.S., STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried

Protective clothing, (gloves, boots, coveralls, headgear).
 Self-contained breathing apparatus.
 Spray nozzles.

EMERGENCY PROCEDURES

Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.

EMERGENCY ACTION

Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).
 Turn ship off wind.

	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash overboard with copious quantities of water.	Not applicable.
FIRE	Substance may burn fiercely. Use water sprays from as many hoses as possible from as far away as practicable. If possible, remove receptacles likely to be involved in a fire or keep them cool with copious quantities of water.	Not applicable.

First Aid – See IMO Medical First Aid Guide (MFAG)

Note

The content of any package which has been exposed to heat may decompose at any time. Even when the fire has been extinguished, keep the crew as far away as possible from these substances until they have completely cooled down. In the event of a decomposition or fire involving a freight container packed with these substances no attempt should be made to open that container. Only after a fire has been extinguished and a decomposition process has ceased may the container be approached.

EMERGENCY SCHEDULE 4.2-08

SPONTANEOUSLY COMBUSTIBLE SUBSTANCES, SODIUM METHYLATE AND RELATED SUBSTANCES

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Spillage may evolve flammable vapours. Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.	Collect spillage, where practicable and dispose of overboard in a safe manner.
FIRE	Use water spray from as many hoses as possible from as far away as practicable.	Batten down; use ship's fixed fire-fighting installation (not water). Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 4.3-01

SUBSTANCES DANGEROUS WHEN WET, VIOLENTLY REACTIVE WITH WATER; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. DRY inert material (e.g. diatomaceous earth) to be maintained as dry as possible in a suitable stow. Dry chemical.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Do not use water. Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Smother spillage with DRY inert material, collect and dispose of overboard in a safe manner.	Not applicable.
FIRE	Substance may burn fiercely. For small fires use dry chemicals. For larger fires smother with DRY inert material, collect and dispose of overboard in a safe manner. If possible remove receptacles likely to be involved.	Not applicable.
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1415	LITHIUM, non-pyrophoric	In fire situation, do not use sand. Use only dry powdered lithium chloride or graphite powder.

EMERGENCY SCHEDULE 4.3-02

SUBSTANCES DANGEROUS WHEN WET, PHOSPHIDES, WATER LIBERATES TOXIC AND/OR FLAMMABLE VAPOURS

Special Emergency Equipment to be carried		
Protective gloves. Self-contained breathing apparatus. Dry chemical.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage where practicable, for safe disposal. Keep water away unless to wash remainder of spillage overboard with copious quantities of water.	Provide adequate ventilation. Keep dry. Collect spillage, where practicable, for safe disposal.
FIRE	Use dry chemical. If possible remove receptacles likely to be involved.	Batten down; use ship's fixed fire-fighting installation (not water). Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 4.3-03

SUBSTANCES DANGEROUS WHEN WET, NON-COMBUSTIBLE

Special Emergency Equipment to be carried		
Protective gloves and goggles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and goggles when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	In dry conditions collect spillage and dispose of overboard in a safe manner; if wet wash overboard with copious quantities of water.	Provide adequate ventilation. Keep dry. Collect spillage, where practicable and dispose of overboard in a safe manner.
FIRE	If possible remove receptacles likely to be involved.	Batten down; use ship's fixed fire-fighting installation (not water).
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1408	FERROSILICON, with 30% or more but less than 90% silicon	} Wear self-contained breathing apparatus when dealing with SPILLAGE or FIRE
2830	LITHIUM FERROSILICON	

EMERGENCY SCHEDULE 4.3-04

SUBSTANCES DANGEROUS WHEN WET, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried		
Protective gloves and goggles. Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves and goggles when dealing with SPILLAGE. Wear protective gloves and self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	In dry conditions collect spillage and dispose of overboard in a safe manner; if wet wash overboard with copious quantities of water.	Keep dry. Collect spillage, where practicable and dispose of overboard in a safe manner.
FIRE	Use water spray.	Batten down; use ship's fixed fire-fighting installation (not water).
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 4.3-05

SUBSTANCES DANGEROUS WHEN WET, MODERATELY REACTIVE WITH WATER

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Spray nozzles.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water.	Keep dry. Collect spillage, where practicable and dispose of overboard in a safe manner.
FIRE	Use water spray from as many hoses as possible from as far away as practicable.	Batten down; use ship's fixed fire-fighting installation (not water). Otherwise adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1183	ETHYLDICHLOROSILANE	} Subsequent to any emergency action, wash deck in vicinity with copious quantities of water.
1242	METHYLDICHLOROSILANE	
1295	TRICHLOROSILANE	
2965	BORON TRIFLUORIDE DIMETHYL ETHERATE	Avoid all sources of ignition. May ignite in contact with water.
2988	CHLOROSILANES, N.O.S.	Subsequent to any emergency action, wash deck in vicinity with copious quantities of water.

EMERGENCY SCHEDULE 4.3-06

SUBSTANCES DANGEROUS WHEN WET, METAL POWDERS

Special Emergency Equipment to be carried

Full protective clothing (gloves, boots, coveralls, headgear, goggles).
Spray nozzles.
Inert material (e.g. diatomaceous earth).

EMERGENCY PROCEDURES

Wear full protective clothing when dealing with FIRE.

EMERGENCY ACTION

Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools).

On deck

Under deck

SPILLAGE Wash spillage overboard with copious quantities of water.

Keep dry.
Collect spillage, where practicable and dispose of overboard in a safe manner.

FIRE Use of water on burning surface will cause violent reaction but will eventually extinguish fire.
Substance may burn fiercely.
For small fires use inert material. For larger fires use water sprays from as many hoses as possible from as far away as practicable.

Adopt action as for "On deck".

First Aid - See IMO Medical First Aid Guide (MFAG)

EMERGENCY SCHEDULE 4.3-07

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EMERGENCY SCHEDULE 4.3-08

SUBSTANCES DANGEROUS WHEN WET, NOT OTHERWISE SPECIFIED

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. DRY inert material (e.g. diatomaceous earth) to be maintained as dry as possible in a suitable stow. Dry chemical.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Avoid all sources of ignition (e.g. naked lights, unprotected light bulbs, electric handtools). Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage where practicable for safe disposal. Keep water away unless to wash remainder of spillage overboard with copious quantities of water from as far away as practicable.	Provide adequate ventilation. Keep dry. Collect spillage, where practicable and dispose of overboard in a safe manner.
FIRE	Substances may burn fiercely. For small fires use dry chemicals. For larger fires smother with DRY inert material, collect and dispose of overboard in a safe manner. If possible remove receptacles likely to be involved.	Batten down; use ship's fixed fire-fighting installation (not water).
First Aid – See IMO Medical First Aid Guide (MFAG)		

CLASS 5

EMERGENCY SCHEDULE 5.1-01

LIQUID OXIDIZING SUBSTANCES, TOXIC AND/OR CORROSIVE, REACTING VIOLENTLY WITH WATER; STOWAGE "ON DECK ONLY"

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water from as far away as practicable. Contaminated clothing must be removed and washed carefully with copious quantities of water.	Not applicable.
FIRE	Use copious quantities of water from as far away as practicable.	Not applicable.
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 5.1-02

LIQUID OXIDIZING SUBSTANCES, TOXIC AND/OR CORROSIVE

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus. Inert absorbent material (e.g. diatomaceous earth).		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
Turn ship off wind.		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard with copious quantities of water from as far away as practicable. Contaminated clothing must be removed and washed carefully with copious quantities of water.	Collect spillage, where practicable, using inert absorbent materials, for safe disposal. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.
FIRE	Use copious quantities of water from as far away as practicable.	Ship's fixed fire-fighting installation may not be effective. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1510	TETRANITROMETHANE	May explode in a fire situation.
2984	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS, with not less than 8% but less than 20% hydrogen peroxide	Self-contained breathing apparatus not necessary – use goggles for eye protection.

EMERGENCY SCHEDULE 5.1-03

LIQUID OXIDIZING SUBSTANCES, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried		
Full protective clothing (gloves, boots, coveralls, headgear, goggles). Self-contained breathing apparatus. Inert absorbent material (e.g. diatomaceous earth).		
<i>EMERGENCY PROCEDURES</i>		
Wear full protective clothing when dealing with SPILLAGE. Wear protective clothing and self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Wash spillage overboard using copious quantities of water. Contaminated clothing must be removed and washed carefully with copious quantities of water.	Collect spillage, where practicable, using inert absorbent materials, for safe disposal. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.
FIRE	Use copious quantities of water from as far away as practicable.	Ship's fixed fire-fighting installation may not be effective. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

EMERGENCY SCHEDULE 5.1-04

SOLID OXIDIZING SUBSTANCES, REACTING VIOLENTLY WITH SMALL QUANTITIES OF WATER

Special Emergency Equipment to be carried	
Full protective clothing (gloves, boots, coveralls, headgear, goggles). Self-contained breathing apparatus.	
<i>EMERGENCY PROCEDURES</i>	
Wear full protective clothing when dealing with SPILLAGE or FIRE on deck and additionally self-contained breathing apparatus when dealing with SPILLAGE or FIRE under deck.	
<i>EMERGENCY ACTION</i>	
<i>On deck</i>	<i>Under deck</i>
SPILLAGE Wash spillage overboard with copious quantities of water from as far away as practicable. Contaminated clothing must be removed and washed carefully with copious quantities of water.	Keep spilt substance dry. Collect for safe disposal. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.
FIRE Use copious quantities of water from as far away as practicable.	Ship's fixed fire-fighting installation may not be effective. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)	

EMERGENCY SCHEDULE 5.1-05

SOLID OXIDIZING SUBSTANCES, TOXIC AND/OR CORROSIVE

Special Emergency Equipment to be carried		
Protective clothing (gloves, boots, coveralls, headgear). Self-contained breathing apparatus.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective clothing and self-contained breathing apparatus when dealing with SPILLAGE or FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage for safe disposal. Wash remainder overboard with copious quantities of water. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.	Collect spillage for safe disposal. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.
FIRE	Use copious quantities of water to fight a fire.	Ship's fixed fire-fighting installation may not be effective. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1445	BARIUM CHLORATE, SOLID	} An adjacent detonation may involve risk of explosion. May explode in a fire situation when strong packages are stowed in a cargo space in large quantities.
1461	CHLORATES, INORGANIC, SOLID, N.O.S.	
2468	TRICHLOROISOCYANURIC ACID, DRY	Small quantities of water on the substance will create an explosion hazard. Dispose of spillage overboard in a safe manner.

EMERGENCY SCHEDULE 5.1-06

SOLID OXIDIZING SUBSTANCES, NOT COVERED BY OTHER SCHEDULES

Special Emergency Equipment to be carried		
Protective gloves, boots and goggles. Self-contained breathing apparatus.		
<i>EMERGENCY PROCEDURES</i>		
Wear protective gloves, boots and goggles when dealing with SPILLAGE. Wear protective gloves, boots and self-contained breathing apparatus when dealing with FIRE.		
<i>EMERGENCY ACTION</i>		
	<i>On deck</i>	<i>Under deck</i>
SPILLAGE	Collect spillage for safe disposal. Wash remainder overboard with copious quantities of water. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.	Collect spillage for safe disposal. Do not use sawdust or other combustible materials as absorbents. Contaminated clothing must be removed and washed carefully with copious quantities of water.
FIRE	Use copious quantities of water to fight a fire. Remove receptacles likely to be involved or keep them cool with copious quantities of water.	Ship's fixed fire-fighting installation may not be effective. Adopt action as for "On deck".
First Aid – See IMO Medical First Aid Guide (MFAG)		

UN No.	Substance or Article	Remarks
1452	CALCIUM CHLORATE	An adjacent detonation may involve risk of explosion. May explode in a fire situation when strong packages are stowed in a cargo space in large quantities.
1485	POTASSIUM CHLORATE	
1495	SODIUM CHLORATE	
1506	STRONTIUM CHLORATE, SOLID	

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UN No.	Substance or Article	Remarks
1748	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURES, DRY	In spillage situation, do NOT repack. In case of fire open hatches to provide maximum ventilation; flooding of the hold may be considered.
1942	AMMONIUM NITRATE	
2067	AMMONIUM NITRATE FERTILIZERS, Type A	
2068	AMMONIUM NITRATE FERTILIZERS, Type A	
2069	AMMONIUM NITRATE FERTILIZERS, Type A	
2070	AMMONIUM NITRATE FERTILIZERS, Type A	
2072	AMMONIUM NITRATE FERTILIZERS, N.O.S.	Self-contained breathing apparatus not necessary. Use goggles for eye protection.
2467	SODIUM PERCARBONATE	

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