

IMDG Code

42-24

Rob van Uffelen IMOAdvies

IMO Advies

Overzicht

- Intro Rob van Uffelen
- Intro IMDG Code
- Veranderingen
- *Zoals altijd: een deel van de tekst is Nederlands maar wetteksten zijn in principe in het Engels.*



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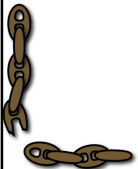
Rob van Uffelen

- Ex Stuurman
- Ex hoofd Gevaarlijke lading PONL en Maersk Line
- Sinds 2007 “Rob van Uffelen IMOAdvies” (kort, IMOAdvies)
- Trainingen, adviezen, audits IMDG en IMSBC Code
 - Wereldwijd (*Nederlands of Engels talig*)
- Lid CTGG, VVA en ICHCA
 - => Intl. Cargo Handling Coordination Association



Rob van Uffelen – www.imoadvies.nl rob@imoadvies.nl

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En daarnaast

- IHM (Inventariseren van gevaarlijke stoffen in schepen)
- Supervisie recyclen van schepen



Turkey's Alağa shipyard is where old ships go ...
dailysabah.com



Turkey's Alağa shipyard is where old ships go ...
dailysabah.com



Turkey's Alağa shipyard is where old ships go t...
dailysabah.com



Turkey - NGO Shipbreaking Platform
shipbreakingplatform.org



Photos: Retired cruise ships dismantled in the wak...
cnn.com

- Voorheen ook in China maar laatste jaren in Turkije, Noorwegen en Denemarken

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42-24

- Wat betekent dit ?
- Wat houdt het in ?

INCORPORATING AMENDMENT 42-24



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Schema IMDG Code amdt 40-43

2021 2022 2023 2024 2025 2026 2027 2028 2029

40-20 40-20 40-20

41-22 41-22 41-22

42-24 42-24 42-24

43-26 43-26 43-26

Rood: Van kracht

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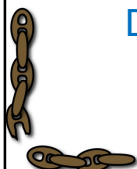
Groen: Overgangsjaar

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43 Slides met veranderingen

- Liquids are dangerous goods which at 50°C have a vapour pressure of not more than 300 kPa (3 bar), which are not completely gaseous at 20°C and at a pressure of 101.3 kPa, and which have a melting point or initial melting point of 20°C or less at a pressure of 101.3 kPa. A viscous substance for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test; or to the test for determining fluidity (penetrometer test) prescribed in section 2.3.4 of Annex A of the **European** Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).*



1.2.1

Definitie “**Recycled plastics material**”

- Twee belangrijke aanpassingen/verduidelijkingen
 - A) recovered from used industrial packagings **or from other plastics material**
 - B) Into new packagings, **including IBCs**

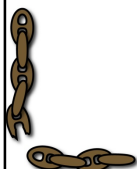
Verder is de tekst van het “quality insurance program” aangepast. Het is wat anders opgeschreven en o.a. **tensile properties** is vervangen door **tensile yield strenght**



1.2.1

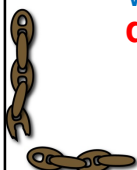
Nieuwe definitie

- "**Degree of filling** means the ratio, expressed in %, of the volume of liquid or solid introduced at 15°C into the means of containment and the volume of the means of containment ready for use."



2.0.6.2

- Such articles may in addition contain cells or batteries. Lithium cells and batteries that are integral to the article shall be of a type proven to meet the testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3. **For articles containing pre-production prototype lithium cells or batteries transported for testing, or for articles containing lithium cells or batteries manufactured in production runs of not more than 100 cells or batteries**, the requirements of **special provision 310** of chapter 3.3 shall apply.
- Where a lithium battery installed in an article is **damaged or defective, the battery shall be removed.**"

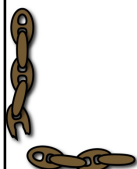


2.5.3

Voeg 3 **nieuwe entries** toe aan de tabel:

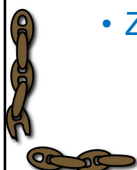
- UN 3109 DIBENZOYL PEROXIDE
- Exempt 2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY) HEXANE
- UN 3105 METHYL ETHYL KETONE PEROXIDE(S)

➔ Voor toegestane verpakkingen, concentraties etc. zie 42-24



2.9.2

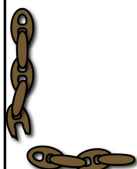
- **Twee nieuwe UN nummers** na sectie Lithium batteries
- **UN 3551 SODIUM ION BATTERIES** with organic electrolyte
- **UN 3552 SODIUM ION BATTERIES CONTAINED IN EQUIPMENT or SODIUM ION BATTERIES PACKED WITH EQUIPMENT**, with organic electrolyte".
- Zie ook 2.9.5 (Nieuw) voor uitleg.



2.9.2

Under "Life-saving appliances", add the following new entry:

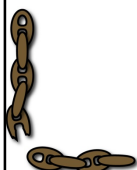
- "UN 3559 ***FIRE SUPPRESSANT DISPERSING DEVICES***"



2.9.2

In the section for "Other substances or articles presenting a danger during transport, but not meeting the definitions of another class", add the following new entries:

- ***UN 3556 VEHICLE, LITHIUM ION BATTERY POWERED***
- ***UN 3557 VEHICLE, LITHIUM METAL BATTERY POWERED***
- ***UN 3558 VEHICLE, SODIUM ION BATTERY POWERED.***



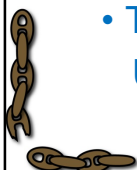
2.10.2.7 (OLD)

- 2.10.2.7 Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.



2.10.2.7 (NEW)

- "Marine pollutants also meeting the criteria for inclusion in a hazard class from 1 to 9 (except class 7), and packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to the provisions of 5.2.1.6, 5.3.2.3, 5.4.1.4.3.6 and 7.1.4.2 of this Code.
- These provisions do not apply to substances transported under UN 3077 or UN 3082 (see special provision 375)



2.10.2.7 (NEW)

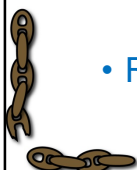
- | | |
|---|--|
| <ul style="list-style-type: none"> • Paragraaf: • 5.2.1.6 • 5.3.2.3 • 5.4.1.4.3.6 • 7.1.4.2 | <p>Gaat over:</p> <p>Merken van verpakkingen</p> <p>Merken van CTUs</p> <p>Toevoeging MARINE POLLUTANT en de technische naam vervalt</p> <p>Stuwage eis vervalt</p> |
|---|--|



3.1.1.1

The DGL in chapter 3.2 lists many of the dangerous goods most commonly transported.

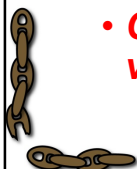
- The list includes entries for specific chemical substances and articles and generic or “not otherwise specified” entries. Since it is not practical to include a separate entry for every chemical substance or article of commercial importance specifically by name, especially names for mixtures and solutions of various chemical constituents and concentrations, the DGL also includes generic or “not otherwise specified” names (e.g. **EXTRACTS, FLAVOURING, LIQUID**, UN 1197 or **FLAMMABLE LIQUID, N.O.S.**, UN 1993).
- Replace by: "**EXTRACTS, LIQUID, for flavour or aroma**".



UN 3536

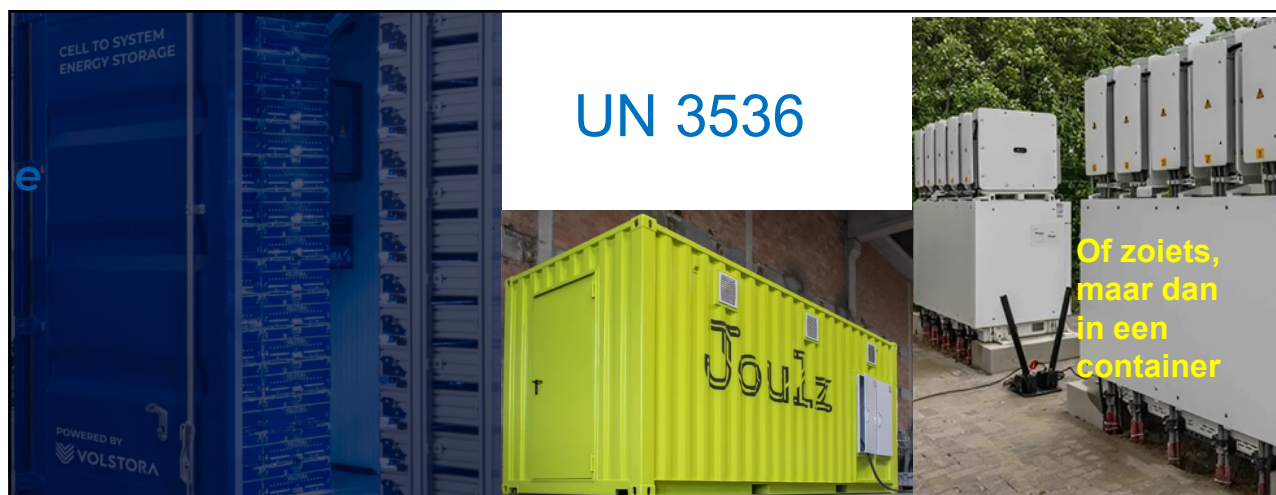
LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT

- CTU containing lithium metal or lithium ion batteries which is designed to serve as mobile power supply unit.
- **Stowage** was Cat A (put it anywhere) and now changed to
- **Cat D (ON DECK ONLY and prohibited on passenger vessels)**



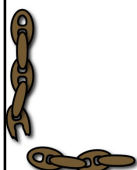
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UN 3536

BESS – Battery Energy Storage System Batterij Opslag Systeem



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3.2 SP amendments

Kolom 6 – SP (Bijzondere bepalingen) ziet veel veranderingen.

O.a.

- **SP 28** referentie toegevoegd aan diverse klasse 4.1 producten
- **SP 399** referentie toegevoegd aan diverse klasse 1 UN nummers
- **SP 310 aangepast en toegevoegd aan**
UN 3537, 3538, 3540, 3541, 3546, 3547 en 3548
 - Dit betreft "articles containing..." en SP 310 gaat over batterijen (Zie hierna).

➔ **Totaal ruim 3 A4 met aanpassingen. Excl. de nieuwe SPs**

SP 310

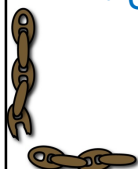
Cells or batteries from production runs of **not more than 100 cells or batteries, or pre-production prototypes of cells or batteries when these prototypes are transported for testing**, shall meet the provisions of 2.9.4 with the exception of 2.9.4.1, 2.9.4.5.7, 2.9.4.6.3 if applicable, 2.9.4.6.4 if applicable and 2.9.4.7.

- Note: "Transported for testing" includes, but is not limited to, testing described in the Manual of Tests and Criteria, part III, subsection 38.3, integration testing and product performance testing.
- These cells and batteries shall be packaged in accordance with packing instruction P910 of 4.1.4.1 or LP905 of 4.1.4.3, as applicable.

Articles (UN Nos. 3537, 3538, 3540, 3541, 3546, 3547 or 3548) may contain such cells or batteries provided that the applicable parts of packing instruction P006 of 4.1.4.1 or LP03 of 4.1.4.3, as applicable, are met."

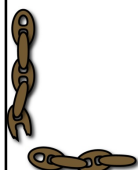
3.2 NEW UN numbers

- UN 0514 FIRE SUPPRESSANT DISPERSING DEVICES (1.4s)
- UN 3551 SODIUM ION BATTERIES with organic electrolyte
- UN 3552 SODIUM ION BATTERIES CONTAINED IN EQUIPMENT
or
SODIUM ION BATTERIES PACKED WITH EQUIPMENT,
with organic electrolyte
- UN 3553 DISILANE
- UN 3554 GALLIUM CONTAINED IN MANUFACTURED ARTICLE
- UN 3555 TRIFLUOROMETHYL TETRAZOLE-SODIUM SALT IN
ACETONE, with not less than 68% acetone, by mass



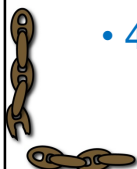
3.2 NEW UN numbers

- UN 3556 VEHICLE, LITHIUM ION BATTERY POWERED
- UN 3557 VEHICLE, LITHIUM METAL BATTERY POWERED
- UN 3558 VEHICLE, SODIUM ION BATTERY POWERED
- UN 3559 FIRE SUPPRESSANT DISPERSING DEVICES
- UN 3560 TETRAMETHYLAMMONIUM HYDROXIDE
AQUEOUS SOLUTION with not less than 25%
tetramethylammonium hydroxid



New SP's

- 375 Marine Pollutant
- 400 Sodium Ion cells or batteries
- 401 Sodium Ion cells or batteries
- 402 Vapour pressure at 70 C of < 1.1MPa
- 403 Nitrocellulose membrane filters
- 404 Vehicles powered by sodium ion batteries
- 405 Vehicles marking and labeling
- 406 Pressure receptacles as LQ (3.4)



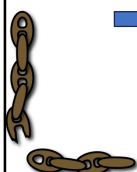
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New SP's

- SP 407 Fire suppressant dispersing devices UN 3559
- SP 408 tetramethylammonium hydroxide (TMAH)
- SP 409 The provisions of chapter 3.2 from the IMDG Code Amendment **41-22 may continue to be applied until 31 December 2026**. (*Dat is dus 1 jaar langer*).

➔ ***Dit geldt alleen voor UN 3560 en dit UN nummer bestond niet in 41-22 ???***



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SP 375 – Marine Pollutants (NEW)

- These substances, when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, **are not subject to any other provisions of the present Code**, provided the packagings meet the general provisions of 4 .1 .1 .1, 4 .1 .1 .2 and 4 .1 .1 .4 to 4 .1 .1 .8

Some New UN numbers and SP's

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing	
						Limited quantities	Excepted quantities	Instructions	Provisions
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4
■ 3552	SODIUM ION BATTERIES CONTAINED IN EQUIPMENT or SODIUM ION BATTERIES PACKED WITH EQUIPMENT, with organic electrolyte	9	–	–	188 230 310 348 360 376 377 384 400 401	0	E0	P903 P908 P909 P910 P911 LP903 LP904 LP905 LP906	–

Some New UN numbers and SP's

■ 3555	TRIFLUOROMETHYL-TETRAZOLESODIUM SALT IN ACETONE, with not less than 68% acetone, by mass	3	-	II	28
■ 3556	VEHICLE, LITHIUM ION BATTERY POWERED	9	-	-	384 388 405 961 962
■ 3557	VEHICLE, LITHIUM METAL BATTERY POWERED	9	-	-	384 388 405 961 962
■ 3558	VEHICLE, SODIUM ION BATTERY POWERED	9	-	-	384 388 404 405 961 962 977



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Fire Suppressent dispersing devices

are articles which contain a **pyrotechnic substance, which are intended to disperse a fire-extinguishing agent (or aerosol) when activated**, and which do not contain any other dangerous goods.

These articles, as packaged for transport, shall fulfil the criteria for division 1.4S, when tested in accordance with test series 6(c) of section 16 of part I of the Manual of Tests and Criteria.

The device shall be transported with either the means of activation removed or equipped with at least two independent means to prevent accidental activation.

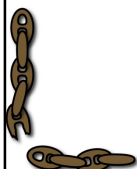
Etc.

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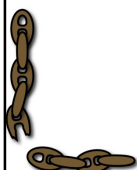
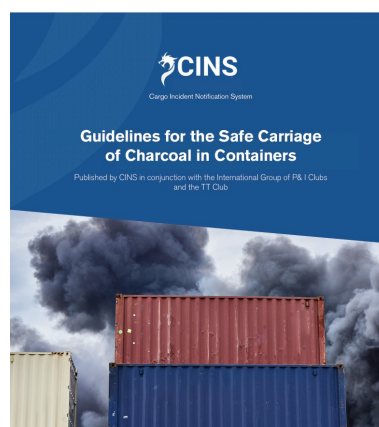
New SP's

- 977 Sodium ion batteries shall meet the provisions of 2.9.5."
- 978 Carbon
- 979 Carbon



SP 978 & 979

- Deze bijzondere bepalingen zijn er gekomen na een aantal scheepsbranden.
- *Carrying charcoal as cargo has led to **68 fires** on containerships in eight years (Bron: Splash)*



SP 978 & 979

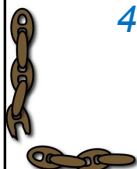
Rhine Maersk:

One of Maersk Line's operated ships has resumed its voyage after catching fire on 9 November. (2024)



5 containers affected/discharged.

4 days delay



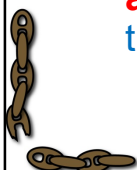
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Kopje van SP 978

For the purpose of this Code, carbon of animal or vegetable origin means carbon, generated in a production or manufacturing process, not formed in a geological process and not obtained from mining. Carbon covered by this entry is produced by pyrolysis of an organic material such as bone, bamboo, coconut shell, jute or wood.

- The **UN N.4 test** according to section 33.4.6 of the UN Manual of Tests and Criteria **shall not be used to exempt carbon of animal or vegetable origin (UN 1361)** from the provisions of this Code.



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INDEX

Add the following new entries in alphabetical order:

"

Substance, material or article	MP	Class	UN. No.
Acetyl acetone peroxide (concentration ≤ 35%, with diluent Type A), <i>see</i>		5.2	3107
<i>tert</i> -Butyl hydroperoxide (concentration ≤ 56%, with diluent Type B), <i>see</i>		5.2	3109
<i>tert</i> -Butylperoxy isopropylcarbonate (concentration ≤ 62%, with diluent Type B), <i>see</i>		5.2	3105
<i>tert</i> -Hexyl peroxyvalate (concentration ≤ 52%, as a stable dispersion in water), <i>see</i>		5.2	3117
(7-Methoxy-5-methyl-benzothiophen-2-yl) boronic acid (concentration 88 to 100%), <i>see</i>		4.1	3230

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4.1.4.1

Packing Instructions

- P003 PP90 is uitgebreid met **UN 3554** en de tekst met het woord **gallium**
- P006 pre-production prototype lithium cells or batteries is uitgebreid met **punt (5)**. "Wederom een hele lap tekst"
- P200 Liquified gasses and dissolved gasses is geupdate, hernummerd en **UN 1010 PSN is veranderd van 40% naar 20% butadienes**.

Verder zijn er diverse aanpassingen in relatie tot dry ice en sodium ion batterijen

En 2 nieuwe verpakking instructies

- **PI 303** betreft het nieuwe UN 3555 (TRIFLUOROMETHYL HYDROXIDE AQUEOUS SOLUTION)
- **PI 912** betreft de nieuwe UN 3556, 3557 en 3558 (VEHICLE SODIUM/LITHIUM POWDERED)

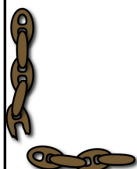
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4.1.4.3

LP99, LP101, LP102, LP622 and LP902

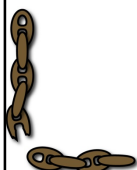
- Replace the words "following packagings" by the words "following **large** packagings".



5.2

- Marking of packagings incl. IBCs
- 5.2.1.10 Lithium **or sodium ion** battery mark

➔ *Deze toevoeging wordt diverse malen herhaald in 5.2.1.10 maar ook in 5.2.2.1.13*

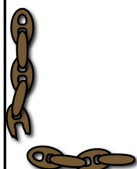


5.4.3

Documentation required aboard the ship

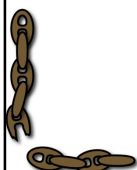
5.4.3.1 Replace the last sentence to read:

- "A detailed stowage plan, which identifies by primary hazard class(es) and subsidiary hazard(s) and sets out the location of all dangerous goods and marine pollutants, may be used in place of such special list or manifest."



5.4.4.2 (New)

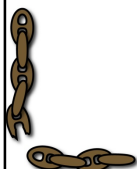
- A certificate exempting a substance, material or article from the provisions of the IMDG Code **and referred to in a special provision** assigned to an individual entry in the Dangerous Goods List shall be submitted together with the cargo information required by SOLAS regulation VI/2.



Voorbeeld

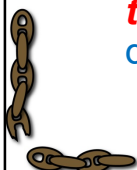
SP931 Replace the text to read:

With the **exception of the documentation** requirements in **5.4.4.2**, the provisions of this Code do not apply to a consignment of this substance which is accompanied by a certificate from the shipper stating that it has no self heating properties."



5.5.4 (herschreven en uitgebreid)

- **Devices containing dangerous goods, which are in use or intended for use during transport**
- 5.5.4.1 Devices in use or intended for use during transport containing dangerous goods, such as data loggers, sensors and cargo tracking devices, attached to or placed in packages, overpacks, bulk containers, freight containers or other types of CTUs, **are not subject to the provisions of this Code other than the requirements set out in 5.5.4.1.1 to 5.5.4.5**, onder de volgende voorwaarden:



5.5.4

- the device shall be in *use or intended for use during transport*;
- the contained dangerous goods (e.g. lithium batteries, fuel cell cartridges) shall *meet the applicable construction and test requirements* specified in this Code; and
- the device shall be capable of withstanding the shocks and loadings normally encountered during transport and shall be safe for use in the dangerous environments to which it may be exposed.

➔ *Hierna volgt nog een half A4 met uitleg, uitzonderingen etc.*

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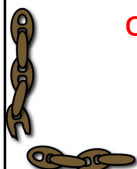
- Replace "ISO 535:1991" by "ISO 535:2014"
- Replace "ISO 11114-1:2012" by "ISO 11114-1:2020" and many more.
- Quite a few "small" technical amendments to packagings

6.8.8.1 voetnoot

- ~~* See also IMO Assembly resolution A.581(14) of 20 November 1985, Guidelines for securing arrangements for the transport of road vehicles on ro-ro ships, as amended by MSC/Circ.812 and MSC.1/Circ.1355~~

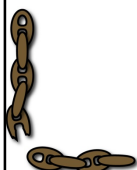
Vervangen door

- "See also resolution MSC.479(102) of 11 November 2020, Revised guidelines for securing arrangements for the transport of road vehicles on ro-ro ships."



7.1.1.

- Replace the words "container ships" by the word "**containerships**".
- Replace the words "barge carrying ships" by the words "**barge-carrying ships**".



7.1.5 (NEW)

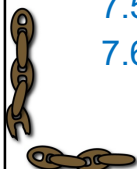
"SW31 Stow away from potential sources of ignition, as determined in 7.4.2.3.2 or 7.5.2.8 or 7.6.2.2.2, as applicable."

7.4.2.3.2 (Container-schepen)

A container with flammable gases or flammable liquids having a flashpoint of less than 23°C c.c transported on deck shall be stowed at least 2.4 m horizontally and projected vertically away from any potential source of ignition.

7.5: *RoRo schepen*

7.6: *General cargo schepen*

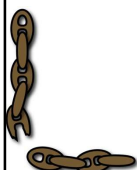


7.6

7.6.2.8.4 At the end, add a new sentence as follows:

- "The requirement for opening the cargo space hatches applies to the weather deck and tween deck hatches (if any)."

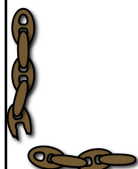
➔ *Dit is een resultaat van de Ammonium Nitrate discussie in ICHCA.*



Appendix B

"FIRE SUPPRESSANT DISPERSING DEVICES"

- Articles which contain a pyrotechnic substance, which are intended to disperse a fire- extinguishing agent (or aerosol) when activated, and which do not contain any other dangerous goods."



Index

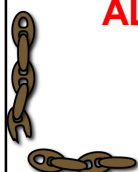
"BATTERIES, CONTAINING SODIUM",

in the column for "Substance, material or article", replace the word "**SODIUM**" by the words

"METALLIC SODIUM OR SODIUM ALLOY".

Ofwel compleet:

BATTERIES, CONTAINING METALLIC SODIUM OR SODIUM ALLOY; Not MP; Class 4.3; UN 3292



Substance, material or article	MP	Class	UN. No.
Batteries, sodium nickel chloride, <i>see</i>		4.3	3292
Butylenes mixture, <i>see, see</i>		2.1	1012
DIBENZOYL PEROXIDE		5.2	3109
2,5-DIMETHYL-2,5-DI-(<i>tert</i> -BUTYLPEROXY) HEXANE (exempt)			
DISILANE		2.1	3553
FIRE SUPPRESSANT DISPERSING DEVICES		1.4S	0514
FIRE SUPPRESSANT DISPERSING DEVICES		9	3559
GALLIUM CONTAINED IN MANUFACTURED ARTICLES		8	3554
METHYL ETHYL KETONE PEROXIDE(S)		5.2	3105
TRIFLUOROMETHYLTETRAZOLE-SODIUM SALT IN ACETONE, with not less than 68% acetone, by mass		3	3555
SODIUM ION BATTERIES with organic electrolyte		9	3551
SODIUM ION BATTERIES CONTAINED IN EQUIPMENT, with organic electrolyte		9	3552
SODIUM ION BATTERIES PACKED WITH EQUIPMENT, with organic electrolyte		9	3552
VEHICLE, LITHIUM ION BATTERY POWERED		9	3556
VEHICLE, LITHIUM METAL BATTERY POWERED		9	3557
VEHICLE, SODIUM ION BATTERY POWERED		9	3558

2.9.5 (New)

Sodium ion batteries

- Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment containing sodium ion, which are a rechargeable electrochemical system where the positive and negative electrode are both intercalation or insertion compounds, constructed with no metallic sodium (or sodium alloy) in either electrode and with an organic non aqueous compound as electrolyte, shall be assigned to UN Nos. 3551 or 3552, as appropriate.
- *More text, see IMDG Code*

New EmS Codes

UN No.	EmS Fire	EmS Spill
0514	F-B	S-X
3551	F-A	S-I
3552	F-A	S-I
3553	F-D	S-U
3554	F-A	<u>S-B</u>
3555	F-E	S-Y
3556	F-A	S-I
3557	F-A	S-I
3558	F-A	S-I
3559	F-B	S-X
3560	F-A	S-B

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Vragen?



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