

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods

30 October 2014

Forty-sixth session

Geneva, 1 – 9 December 2014

Item 4 of the provisional agenda

Guiding principles for the Model Regulations

Proposal for the development of illustrated guidance for the labelling and marking of packagings, containers and tank

Transmitted by the expert from the Republic of Korea

Background and discussion

1. The Republic of Korea submitted paper CCC.1 INF.3 concerning guidelines for labelling and marking on packages and CTUs to the first session of the International Maritime Organization's Sub-Committee on Cargoes and Containers held in September 2014. The purpose of the document was to aid compliance with the provisions of the IMDG Code by showing illustrations of correct labelling and marking for use by consignors and other end-users of the regulations. Paper CCC.1 INF.3 is attached to this paper as Annex 1.
2. The CCC noted the paper submitted by the Republic of Korea with interest although time constraints prevented any detailed discussion of the contents. However, a view was expressed that the guidance document should be brought to the attention of the UN Sub-Committee of Experts on the Transport of Dangerous Goods. It was further proposed that this document might usefully form the basis for similar multi-modal material that might be added to the UN Guiding Principles document.
3. The Republic of Korea does not itself feel that it has the relevant expertise to convert its document into one which reflects either the provisions of the UN Model Regulations or, better still, offers guidance on the requirements of the Model Regulations and each of the international modal provisions, where possible. However, it is happy to allow free use of its guidance document as a basis and would be willing to contribute to a correspondence working group led by others to undertake such a task. Such a document could form part of the Guiding Principles or, if more appropriate, could be a free standing document made available on the UNECE web-site.

Proposal

4. The Republic of Korea proposes that a work item be added to the work programme for the 2015-16 biennium to develop multi-modal illustrated guidance on the marking and labelling of packagings, containers and tanks and that a correspondence working group be formed to complete such a task.

SUB-COMMITTEE ON CARRIAGE
OF CARGOES AND CONTAINERS
1st session
Agenda item 6

CCC 1/6/INF.3
5 June 2014
ENGLISH ONLY

Amendments to the IMDG Code and supplements

The Guideline for labelling and marking on packages and CTUs

Submitted by the Republic of Korea

SUMMARY

Executive summary: This document provides the guideline for labeling and marking on packages and CTUs by illustrations for the convenience of industries in better application of the labeling and marking of dangerous goods packages.

Strategic direction: 5.2

High-level action: 5.2.3

Planned output: 5.2.3.4

Action to be taken: Paragraph 3

Related documents: DSC 17/3/9

Introduction

1. Chapter 5.2 of the IMDG Code contains provisions of marking and labelling of packages including IBCs. Chapter 5.3 of the Code requires placarding and marking of cargo transport units. Currently these requirements are illustrated in text which may not be user-friendly to the industry. In addition, the marking and labelling on unit loads or on cargo transport units which contains various kinds of packages may also be confusing to the industry. According to reports submitted to DSC, on the results of container inspection programmes carried out during the last 5 years (2006 ~ 2010) 47% of the were found deficient (packages: 10%, CTUs: 37%) on labelling of packages and placarding as well as marking on cargo transport units

2. The Republic of Korea proposes suggested guidelines for labelling and marking on packages and CTUs (annexed to this document). The guideline with sample illustrations are focused on typical labellings and markings of packages and their locations of sticking according to packing method. These guidelines will assist the industry in better

understanding in the application of the required labelling and marking for the dangerous good packages and CTUs.

Action requested of the Sub-Committee

3. The Sub-Committee is invited to consider the information provided in the annex to this document.

Annex

The Guideline for labelling and marking of dangerous goods on packages and CTUs

- Note 1 :** These illustrations of guideline are examples of typical labels and marks on packages including IBCs. Therefore, detailed marking and labelling of dangerous goods shall be followed by relevant provisions of the IMDG Code.
- Note 2 :** The special marking and labelling provisions for class 7 are not included in the guideline.

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1. Labels and marks on packages

Illustration 1 / 2 is an example for labelling and marking of dangerous goods on packages including IBCs.

Labels shall be in the form of a square set of an angle of 45°(diamond-shaped) with minimum dimensions of **100 mm by 100 mm**. They shall have a **line 5 mm inside the edge** and running parallel with it.

IBCs of more than 450 L capacity and large packaging shall **be marked on two opposing sides**.

The **UN Number** and the letters "UN" shall be **at least 12 mm high**, except for packagings of 30 L or 30 kg capacity or less and except for cylinders of 60 L water capacity or less, when they shall be at least 6 mm in height and for packagings of 5 L or 5 kg or less when they shall be of an appropriate size.

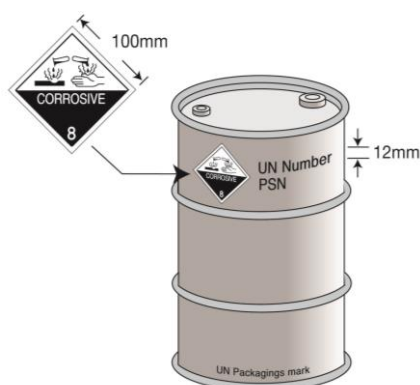


Illustration 1 – Labels and marks

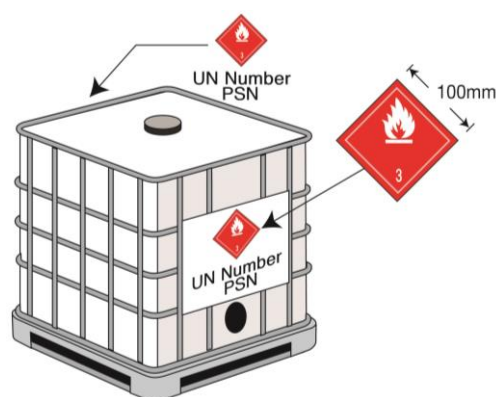


Illustration 2 – Labels and marks on IBCs

[relevant provisions of IMDG Code (Amdt. 36-12) : 5.2.1.1 , 5.2.1.4 , 5.2.2.2.1.1 and 5.2.2.2.2]

2. Placards and marks on CTUs

Illustration 3 is an example for placarding and marking of CTUs.

Placards shall be not less than **250 mm by 250 mm**, with a **line 12.5 mm inside the edge** and parallel with it. The number of the class or division shall be not less than **25 mm high** in digit.

The **UN Number** for the goods shall be displayed in black digits not less than **65 mm high**, either:

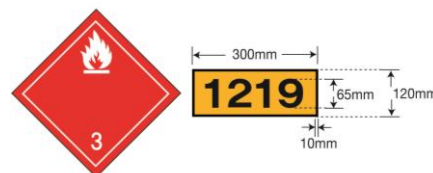
against a white background on the placard; or

on an orange rectangular panel not less than **120 mm high** and **300 mm wide**, with a **10 mm black border**.



A Numbered Placard

OR



A Placard and an Orange Panel

Illustration 3 – Placards and marks

[relevant provisions of IMDG Code (Amdt. 36-12) : 5.3.1.1 , 5.3.1.2 and 5.3.2.1.2]

3. Typical Packages / IBCs in CTU

3.1 Packaged dangerous goods loaded in excess of 4,000kg gross mass

Illustration 4 is an example for regulations of typical packages including IBCs in CTU in case of packaged dangerous goods loaded in excess of 4,000kg gross mass.

There is an each example of typical packages and IBCs.

And the illustration of the CTU show the case of loaded IBCs.

The **UN Number** shall be displayed when packaged dangerous goods loaded in excess of 4,000kg gross mass, to which only one UN Number has been assigned and which are the only dangerous goods in the cargo transport unit.

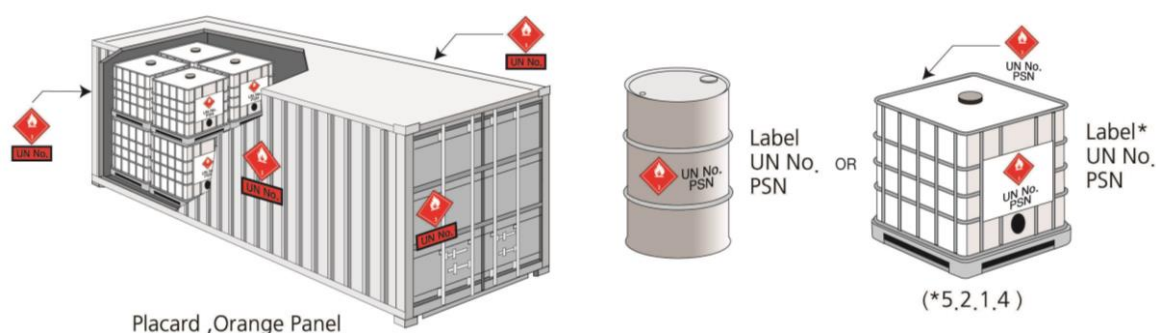


Illustration 4 – Loaded in excess of 4,000kg in CTU
[relevant provisions of IMDG Code (Amtdt. 36-12) : 5.3.1, 5.3.2.1 and 5.2.1]

3.2 Packaged dangerous goods loaded in not excess of 4,000kg gross mass

Illustration 5 is an example for regulations of typical packages including IBCs in CTUs, in case of packaged dangerous goods loaded in not excess of 4,000kg gross mass or loaded more than two dangerous goods having different UN number. In these cases, the UN Number shall not be displayed on CTU.

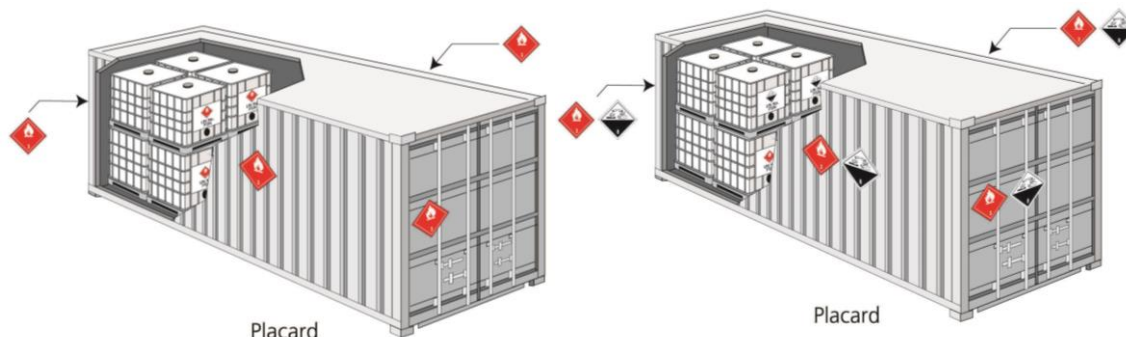


Illustration 5.1 – Loaded in not excess of 4,000kg in CTU

Illustration 5.2 – Loaded more than two dangerous goods in CTU

3.3 Packaged dangerous goods containing marine pollutant in CTUs

Illustration 6 is an example for marine pollutant mark(MP mark) on CTUs and packages.

Illustration 7 is an example for regulations of typical packages including IBCs containing marine pollutant in CTUs.

There is an each example of typical packages and IBCs.

And the illustration of the CTUs show the case of loaded IBCs..

Cargo transport units containing marine pollutants shall clearly display the marine pollutant mark even if the CTUs contains packages not required to bear the marine pollutant mark. The mark shall have minimum dimensions of **250mm x 250mm**.

Packages containing marine pollutants shall be durably marked with the environmentally hazardous substance mark, and the dimensions of mark shall be at least **100 mm x 100 mm**.

But the mark make an exception of single packagings and combination packagings where such single packagings or inner packagings of such combination packagings have :

- a net quantity of 5 L or less for liquids; or
- a net mass of 5 kg or less for solids.

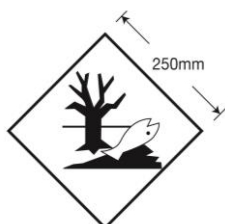


Illustration 6.1 – MP mark on CTUs

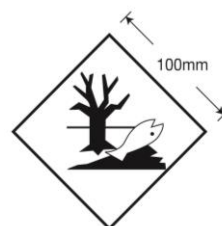


Illustration 6.2 – MP mark on packages

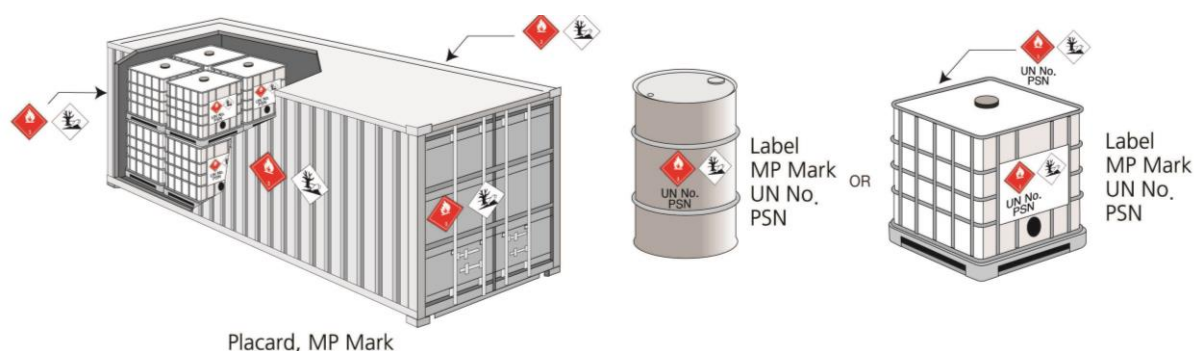


Illustration 7 – Typical Packages / IBCs containing **marine pollutant** in CTUs
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.2.1.6 and 5.3.2.3]

4. Packaged in limited quantity in CTUs

Illustration 8 / 9 explain the regulations for marking for packages containing limited quantities.

For packages containing dangerous goods in **limited quantities(LQ)**, no marks are required on inner packages and **LQ Mark** are required on **outer packages only**.

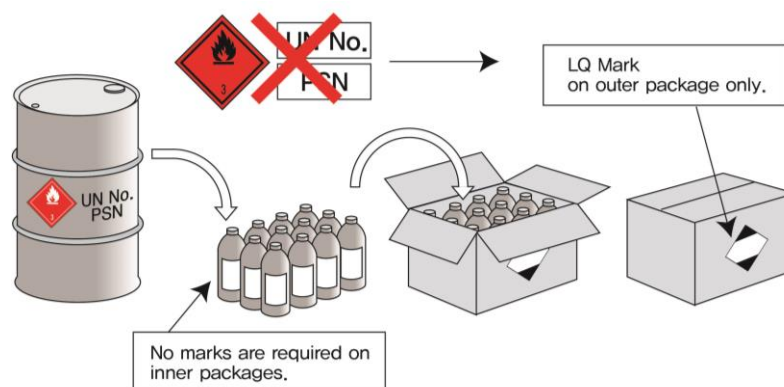


Illustration 8 – Marking for packages containing limited quantities

The top and bottom portions and the surrounding line of mark shall be black. The centre area shall be white or a suitable contrasting background.

The minimum dimensions of mark for packages shall be **100 mm x 100 mm** and the minimum width of line forming the diamond shall be 2 mm.

If the size of the package so requires, the dimension may be reduced, to be not less than 50 mm x 50 mm.

The minimum dimensions of mark for CTUs shall be **250 mm x 250 mm**.

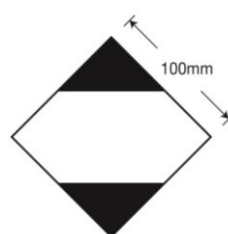
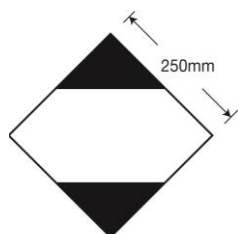


Illustration 9.1 - LQ mark on CTUs Illustration 9.2 – LQ mark on packages
[relevant provisions of IMDG Code (Amdt. 36-12) : 3.4.5.1 and 3.4.5.5.4]

Illustration 10 is an example for packages containing dangerous goods in **limited quantities** in CTUs.

CTUs containing dangerous goods packed in limited quantities with no other dangerous goods shall be placarded and marked according to illustration 9.1 and 9.2.

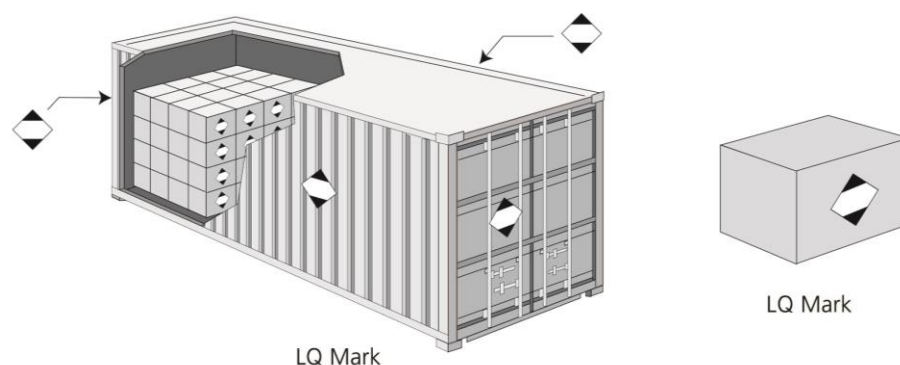


Illustration 10 – Packages in **limited quantities** in CTUs
[relevant provisions of IMDG Code (Amdt. 36-12) : 3.4.5.5, 5.2.1.9 and 5.3.2.4]

If the dangerous goods packed in limited quantities are marine pollutants, the CTUs shall bear the marine pollutant mark as indicated in illustration 6.1.

But marine pollutant mark on packages make an exception of single packagings and combination packagings where such single packagings or inner packagings of such combination packagings have :

- a net quantity of 5 L or less for liquids; or
- a net mass of 5 kg or less for solids.

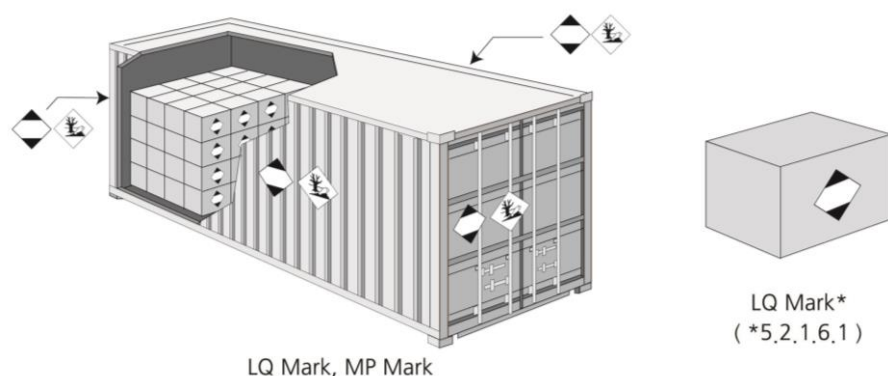


Illustration 11 – Packages in **limited quantities containing marine pollutant** in CTUs
[relevant provisions of IMDG Code (Amdt. 36-12) : 3.4.5.5.3]

CTUs containing dangerous goods and dangerous goods packed in limited quantities shall be placarded and marked according to the provisions applicable to the dangerous goods which are not packed in limited quantities.

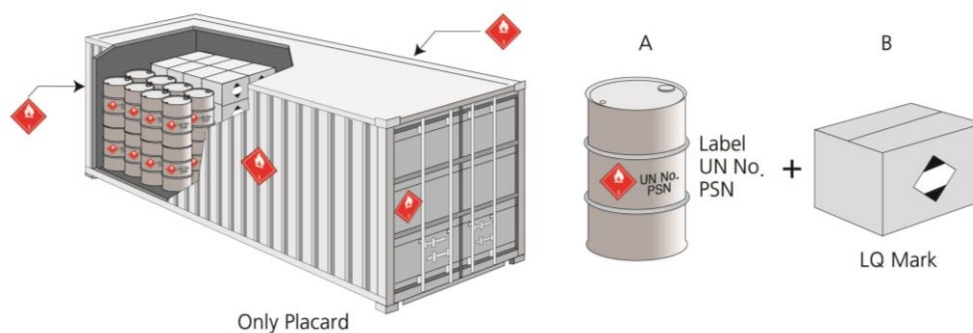


Illustration 12 – CTUs containing dangerous goods and dangerous goods packed in limited quantities
[relevant provisions of IMDG Code (Amdt. 36-12) : 3.4.5.5.2]

Packages containing excepted quantities of dangerous goods shall be marked the **excepted quantities(EQ)** mark.

The primary hazard class of each of the dangerous goods contained in the packages shall be shown in the excepted quantities mark.

And where the name of the consignor or consignee is not shown elsewhere on the package, this information shall be included within the mark.

The dimensions of the mark shall be a minimum of **100 mm x 100 mm**.



Excepted quantities mark

* The class, or, when assigned, the division(s), shall be shown in this location.

** The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.

Illustration 13 – Packages containing dangerous goods in **excepted quantities**
[relevant provisions of IMDG Code (Amdt. 36-12) : 3.5.4 and 5.2.1.8]

5. Packages comprising an overpack in CTUs

Illustration 14 is an example for packages comprising an **overpack** in CTUs.

An overpack and unit load shall be marked with the **Proper Shipping Name(PSN)** and the **UN Number(UN No.)** and **marked and labelled** as required for packages, for each item of dangerous goods contained in the overpack or unit load.

An overpack, in addition, shall be marked with the word “**OVERPACK**” unless markings and labels representative of all dangerous goods in the overpack are visible.

The individual packages comprising a unit load or an overpack shall be marked and labelled and shall comply with all applicable provisions of the IMDG Code.

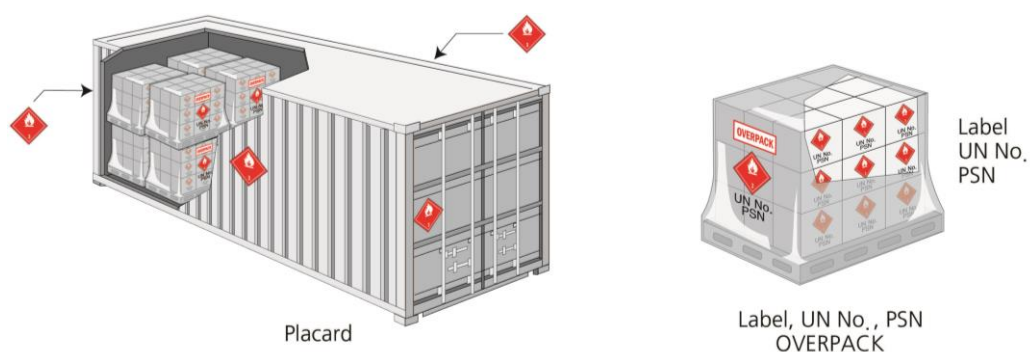


Illustration 14 – Packages comprising an **overpack**
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.1.2]

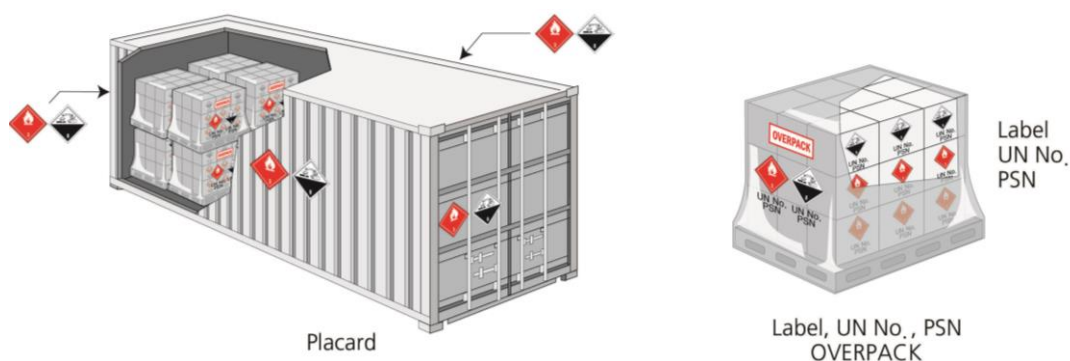


Illustration 15 – Packages comprising an **overpack** with different dangerous goods
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.1.2]

Illustration 16 is an example for packages containing subsidiary risk comprising an **overpack** in CTUs.

For which a subsidiary risk label is required, placards and labels shall also be displayed for those subsidiary risk.

But, if the hazard represented by that placard is already indicated by a primary risk placard / label, a subsidiary risk placard / label doesn't need.

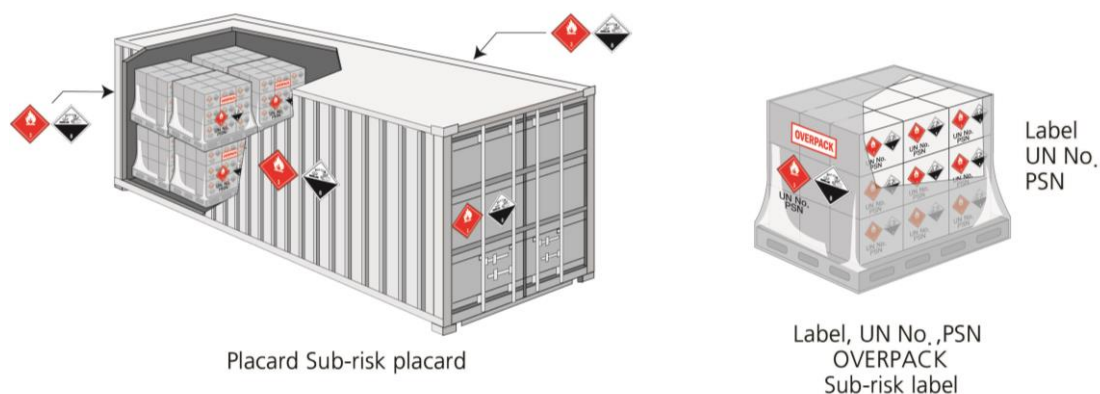


Illustration 16 – Packages containing subsidiary risk comprising an **overpack**
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.2.2.1.2, 5.3.1.1.3]

Illustration 17 is an example for packages comprising an overpack with dangerous goods packed in limited quantities in CTUs.

When packages containing dangerous goods packed in limited quantities are placed in an overpack or in a unit load, the overpack or the unit shall be marked with the **marking required by illustration 9.2** unless the markings representative of all dangerous goods in the overpack or the unit load are visible.

In addition, an overpack shall be marked with the word “**OVERPACK**”

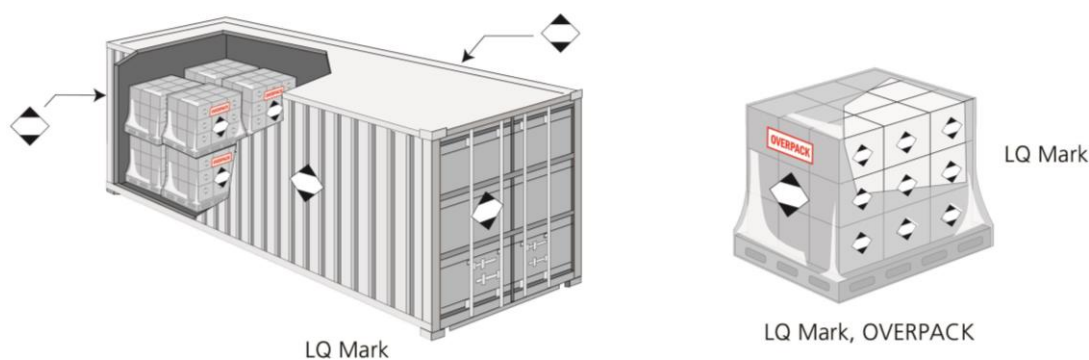


Illustration 17 – Packages comprising an **overpack** with dangerous goods packed in limited quantities
[relevant provisions of IMDG Code (Amdt. 36-12) : 3.4.5.4]

6. Mixed packages in CTUs

Illustration 16 is an example for **mixed packages** in CTUs.

When two or more dangerous goods are packed within the same outer packagings, the package shall be **labelled and marked** as required for **each substance**.

Subsidiary risk labels need not be applied if the hazard is already represented by a primary risk label.

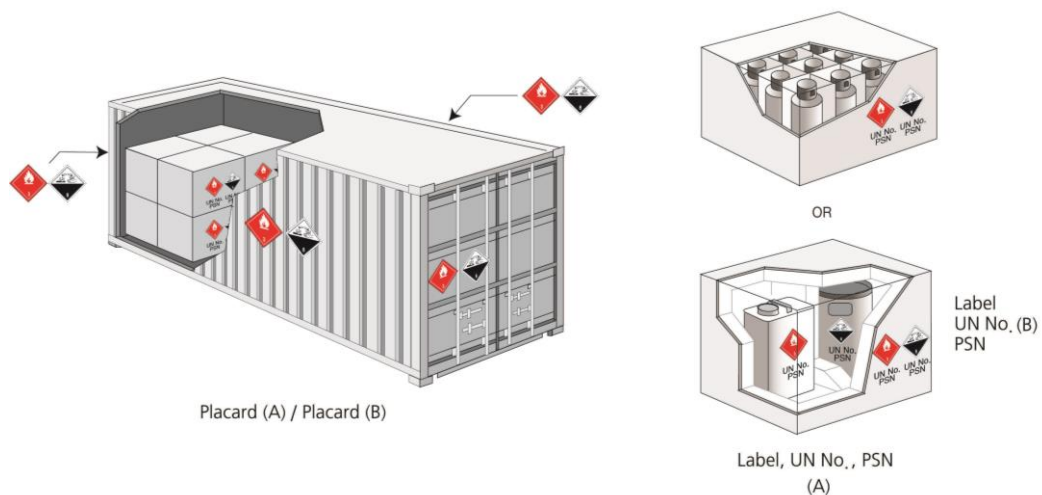


Illustration 16 – Mixed packages in CTUs
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.1.4]

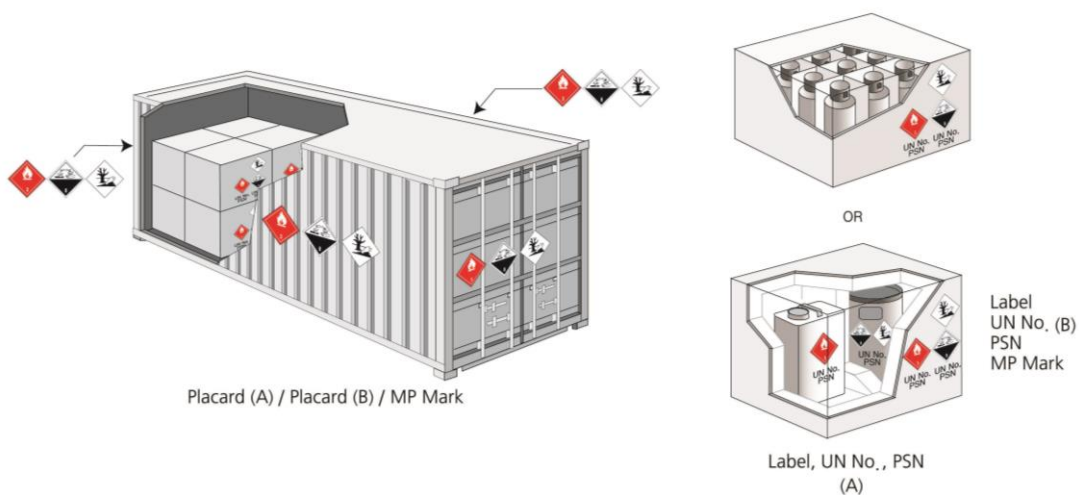


Illustration 17 – Mixed packages containing marine pollutant in CTUs

7. Dangerous goods in Tank Container / BK2

Illustration 18 / 19 is an example for dangerous goods in tank container / BK2.

A **portable tank** containing dangerous goods or residues of dangerous goods shall be clearly display the **placard** and UN Number on **each side** and **each end** of the unit.

The **Proper Shipping Name(PSN)** of the contents shall be durably marked on **at least both sides** of tank transport units in black digits not less than **65 mm high**.



The **UN Number(UN No.)** shall be displayed in black digits not less than **65 mm high** on an **orange rectangular panel** not less than **120 mm high and 300 mm wide**, with a 10 mm black border.

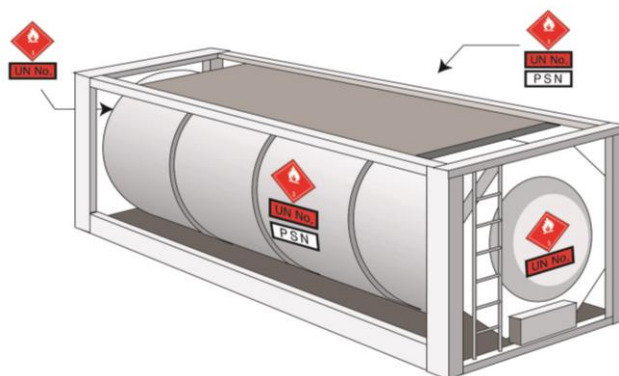


Illustration 18 – Dangerous goods in **tank container**
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.3.1.1.4.1 , 5.3.2.0 and 5.3.2.1]

A **BK2** containing dangerous goods or residues of dangerous goods shall be clearly display the **placard and UN Number** at least on **both sides** and on the **back** of the unit.

The **Proper Shipping Name(PSN)** of the contents shall be durably marked on **at least both sides** of tank transport units in black digits not less than **65 mm high**.

The **UN Number(UN No.)** shall be displayed in black digits not less than **65 mm high** on an **orange rectangular panel** not less than **120 mm high and 300 mm wide**, with a 10 mm black border.

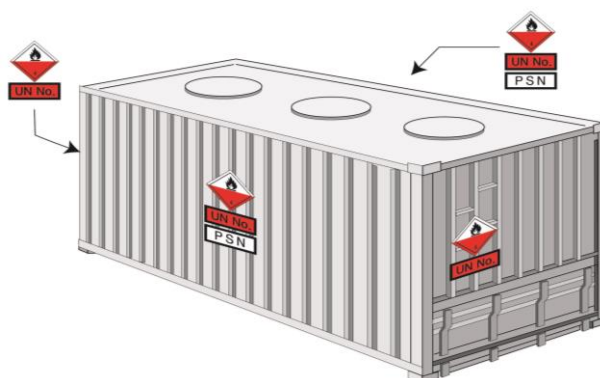


Illustration 19 – Dangerous goods in **BK2**
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.3.1.1.4.1 , 5.3.2.0 and 5.3.2.1]

8. Special provisions

8.1 Marking and placarding on fumigated CTUs

Illustration 20 / 21 is an example for regulations of fumigation warning mark and placarding on CTUs.

Fumigated CTUs (UN 3359) containing no other dangerous goods are not subject to any provisions of the IMDG Code other than those of this section.

A fumigated CTU shall be marked with a warning mark affixed at each access point in a location where it will be easily seen by persons opening or entering the CTU.

The mark shall be rectangular and shall not be less than **300 mm wide** and **250 mm high**.

The markings shall be in black print on a white background with lettering not less than **25 mm high**.

When the fumigated CTU is loaded with dangerous goods in addition to the fumigant, any provisions of the IMDG Code relevant to these goods applies in addition to the provisions of this section.

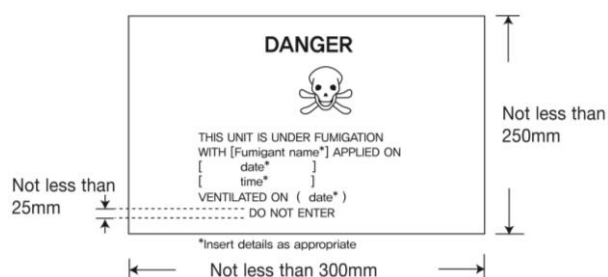


Illustration 20 – Fumigation warning mark
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.5.2.3.2]

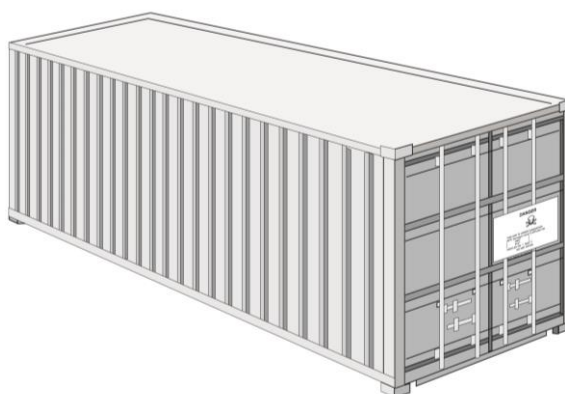


Illustration 21 – Fumigated CTU
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.5.2]

8.2 Marking of CTUs and packages containing a coolant or conditioner

Illustration 22 / 23 is an example for regulations of marking of CTUs and packages containing a coolant or conditioner.

CTUs containing substances used for cooling or conditioning purposes (other than fumigation) during transport are not subject to any provisions of the IMDG Code other than those of this section.

When dangerous goods are loaded in cooled or conditioned CTUs any provisions of the IMDG Code relevant to these dangerous goods apply in addition to the provisions of this section.

Packages containing dangerous goods used for cooling or condition shall be marked **with the Proper Shipping Name** of these dangerous goods followed by the words **“AS COOLANT”** or **“AS CONDITIONER”** with lettering not less than **25 mm high** as appropriate.

The warning mark shall be **rectangular** and shall not be less than **150 mm wide** and **250 mm high**. And the mark shall include the word **“WARNING”** in **red or white** with lettering not less than **25 mm high**, affixed at each access point in a location where it will be easily seen by persons opening or entering the CTUs.

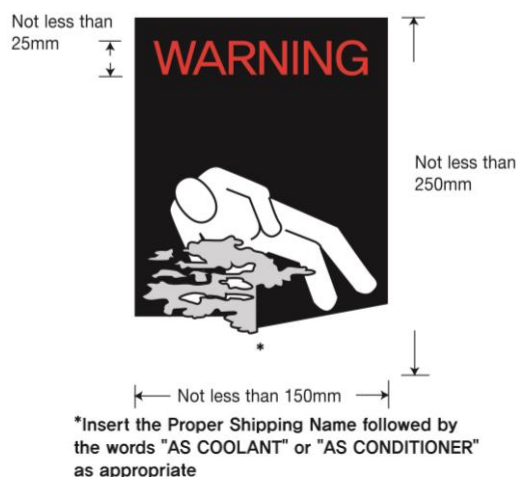


Illustration 22 – **Warning mark** for CTUs containing dangerous goods **used for cooling or conditioning**
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.5.3.6]

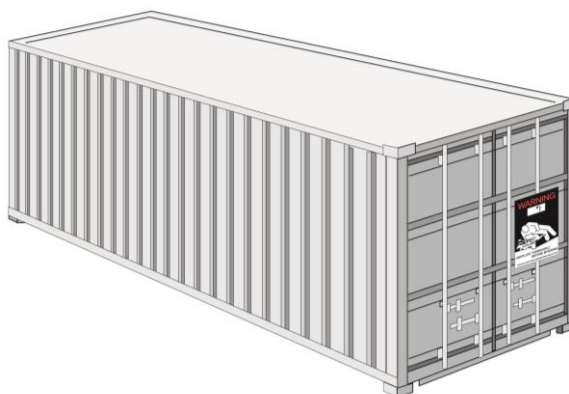


Illustration 23 – CTUs containing dangerous goods **used for cooling or conditioning**
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.5.3.6]

8.3 Elevated temperature substance in CTUs

CTUs containing a substances that is transported or offered for transport in a liquid state at a temperature equal to or exceeding **100 °C** or in a solid state at a temperature equal to or exceeding **240 °C** shall bear on **each side** and on **each end** the mark.

The triangular shaped mark shall have sides of **at least 250 mm** and shall be shown in red.

In addition to the elevated temperature mark, **the maximum temperature of the substance expected** to be reached during transport shall be durably marked **on both sides** of the portable tank or insulation jacket, immediately adjacent to the elevated temperature mark, in characters **at least 100 mm high**.



Illustration 24 –Elevated temperature mark
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.3.2.2.1]

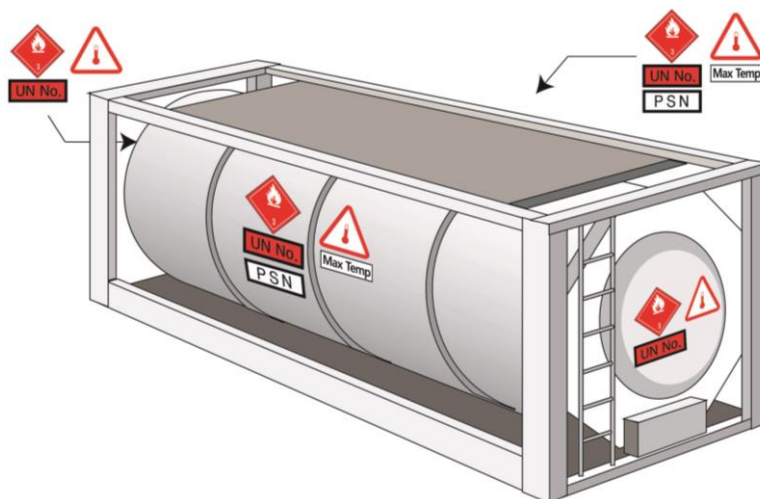


Illustration 25 – Dangerous goods in **tank container** containing elevated temperature substances
[relevant provisions of IMDG Code (Amdt. 36-12) : 5.3.2.2]