

# Chapter 7.2

## General segregation provisions

### 7.2.1 Introduction

This chapter contains the general provisions for the segregation of goods which are mutually incompatible.

Additional segregation provisions are given in:

- 7.3 Consigning operations concerning the packing and use of cargo transport units (CTUs) and related provisions;
- 7.4 Stowage and segregation on containerships;
- 7.5 Stowage and segregation on roll-on/roll-off ships;
- 7.6 Stowage and segregation on general cargo ships; and
- 7.7 Shipborne barges on barge-carrying ships.

### 7.2.2 Definitions

#### 7.2.2.1 Segregation

*Segregation* is the process of separating two or more substances or articles which are considered mutually incompatible when their packing or stowage together may result in undue hazards in case of leakage or spillage, or any other accident.

However, as the extent of the hazard arising may vary, the segregation arrangements required may also vary as appropriate. Segregation is obtained by maintaining certain distances between incompatible dangerous goods or by requiring the presence of one or more steel bulkheads or decks between them, or a combination thereof. Intervening spaces between such dangerous goods may be filled with other cargo compatible with the dangerous substances or articles in question.

#### 7.2.2.2 Segregation terms

The following segregation terms that are used throughout this Code are defined in other chapters of this part as they apply to packing cargo transport units and segregation on board different ship types:

- .1 "away from";
- .2 "separated from";
- .3 "separated by a complete compartment or hold from";
- .4 "separated longitudinally by an intervening complete compartment or hold from".

Segregation terms such as "away from class ..." that are used in the Dangerous Goods List, "class ..." is deemed to include:

- .1 all substances within "class ..."; and
- .2 all substances for which a subsidiary hazard label of "class ..." is required.

### 7.2.3 Segregation provisions

7.2.3.1 To determine the segregation requirements between two or more dangerous goods, the segregation provisions, including the segregation table (7.2.4) and column 16b of the Dangerous Goods List shall be consulted, see also the annex to this chapter. In case of conflicting provisions, the provisions of column 16b of the Dangerous Goods List, always take precedence.

7.2.3.2 Whenever a segregation term applies (see 7.2.2.2), the goods are:

- .1 not permitted to be packed in the same outer packaging; and
- .2 not permitted to be transported in the same cargo transport unit except as provided in 7.2.6 and 7.3.4.

For "limited quantities" and "excepted quantities" see chapters 3.4 and 3.5.

**7.2.3.3** Where the provisions of this Code indicate a single secondary hazard (one subsidiary hazard label), the segregation provisions applicable to that hazard shall take precedence where they are more stringent than those of the primary hazard. The segregation provisions corresponding to a subsidiary hazard of class 1 are those for class 1 division 1.3.

**7.2.3.4** The segregation provisions for substances, materials or articles having more than two hazards (two or more subsidiary hazard labels) are given in column 16b of the Dangerous Goods List.

For example:

In the Dangerous Goods List entry for BROMINE CHLORIDE, class 2.3, UN 2901, subsidiary hazards 5.1 and 8, the following particular segregation is specified:

“SG6 (segregation as for class 5.1), and SG19 (stow “separated from” class 7).”

## 7.2.4 Segregation table

The general provisions for segregation between the various classes of dangerous goods are shown in the “segregation table” given below.

Since the properties of substances, materials or articles within each class may vary greatly, the Dangerous Goods List shall always be consulted for particular provisions for segregation as, in the case of conflicting provisions, these take precedence over the general provisions.

Segregation shall also take account of a single subsidiary hazard label.

| CLASS  | 1.1<br>1.2<br>1.5 | 1.3<br>1.6 | 1.4 | 2.1 | 2.2 | 2.3 | 3 | 4.1 | 4.2 | 4.3 | 5.1 | 5.2 | 6.1 | 6.2 | 7 | 8 | 9 |
|--|-------------------|------------|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|---|---|---|
| Explosives 1.1, 1.2, 1.5   | *                 | *          | *   | 4   | 2   | 2   | 4 | 4   | 4   | 4   | 4   | 4   | 2   | 4   | 2 | 4 | X |
| Explosives 1.3, 1.6  | *                 | *          | *   | 4   | 2   | 2   | 4 | 3   | 3   | 4   | 4   | 4   | 2   | 4   | 2 | 2 | X |
| Explosives 1.4   | *                 | *          | *   | 2   | 1   | 1   | 2 | 2   | 2   | 2   | 2   | 2   | X   | 4   | 2 | 2 | X |
| Flammable gases 2.1  | 4                 | 4          | 2   | X   | X   | X   | 2 | 1   | 2   | 2   | 2   | 2   | X   | 4   | 2 | 1 | X |
| Non-toxic, non-flammable gases 2.2   | 2                 | 2          | 1   | X   | X   | X   | 1 | X   | 1   | X   | X   | 1   | X   | 2   | 1 | X | X |
| Toxic gases 2.3  | 2                 | 2          | 1   | X   | X   | X   | 2 | X   | 2   | X   | X   | 2   | X   | 2   | 1 | X | X |
| Flammable liquids 3  | 4                 | 4          | 2   | 2   | 1   | 2   | X | X   | 2   | 2   | 2   | 2   | X   | 3   | 2 | X | X |
| Flammable solids self-reactive substances, solid desensitized explosives and polymerising substances 4.1 | 4                 | 3          | 2   | 1   | X   | X   | X | X   | 1   | X   | 1   | 2   | X   | 3   | 2 | 1 | X |
| Substances liable to spontaneous combustion 4.2  | 4                 | 3          | 2   | 2   | 1   | 2   | 2 | 1   | X   | 1   | 2   | 2   | 1   | 3   | 2 | 1 | X |
| Substances which, in contact with water, emit flammable gases 4.3  | 4                 | 4          | 2   | 2   | X   | X   | 2 | X   | 1   | X   | 2   | 2   | X   | 2   | 2 | 1 | X |
| Oxidizing substances (agents) 5.1  | 4                 | 4          | 2   | 2   | X   | X   | 2 | 1   | 2   | 2   | X   | 2   | 1   | 3   | 1 | 2 | X |
| Organic peroxides 5.2  | 4                 | 4          | 2   | 2   | 1   | 2   | 2 | 2   | 2   | 2   | 2   | X   | 1   | 3   | 2 | 2 | X |
| Toxic substances 6.1   | 2                 | 2          | X   | X   | X   | X   | X | X   | 1   | X   | 1   | 1   | X   | 1   | X | X | X |
| Infectious substances 6.2  | 4                 | 4          | 4   | 4   | 2   | 2   | 3 | 3   | 3   | 2   | 3   | 3   | 1   | X   | 3 | 3 | X |
| Radioactive material 7   | 2                 | 2          | 2   | 2   | 1   | 1   | 2 | 2   | 2   | 2   | 1   | 2   | X   | 3   | X | 2 | X |
| Corrosive substances 8   | 4                 | 2          | 2   | 1   | X   | X   | X | 1   | 1   | 1   | 2   | 2   | X   | 3   | 2 | X | X |
| Miscellaneous dangerous substances and articles 9  | X                 | X          | X   | X   | X   | X   | X | X   | X   | X   | X   | X   | X   | X   | X | X | X |

The numbers and symbols in the table have the following meanings:

- 1 – “away from”
- 2 – “separated from”
- 3 – “separated by a complete compartment or hold from”
- 4 – “separated longitudinally by an intervening complete compartment or hold from”
- X – the Dangerous Goods List has to be consulted to verify whether there are specific segregation provisions
- \* – see 7.2.7.1 of this chapter for the segregation provisions between class 1 substances or articles

## 7.2.5 Segregation groups

7.2.5.1 For the purpose of segregation, dangerous goods having certain similar chemical properties have been grouped together in segregation groups as listed in 7.2.5.2. The entries allocated to these segregation groups are listed in 3.1.4.4 and are identified by a segregation group code in column 16b of the Dangerous Goods List.

7.2.5.2 The segregation group codes given in column 16b of the Dangerous Goods List are as specified below:

| Segregation Group Code | Segregation Group   | Description   |
|------------------------|---------------------|---|
| SGG1                   | 1                   | acids   |
| SGG1a                  | 1, entries marked * | * identifies strong acids   |
| SGG2                   | 2                   | ammonium compounds  |
| SGG3                   | 3                   | bromates  |
| SGG4                   | 4                   | chlorates   |
| SGG5                   | 5                   | chlorites   |
| SGG6                   | 6                   | cyanides  |
| SGG7                   | 7                   | heavy metals and their salts (including their organometallic compounds) |
| SGG8                   | 8                   | hypochlorites   |
| SGG9                   | 9                   | lead and its compounds  |
| SGG10                  | 10                  | liquid halogenated hydrocarbons   |
| SGG11                  | 11                  | mercury and mercury compounds   |
| SGG12                  | 12                  | nitrites and their mixtures   |
| SGG13                  | 13                  | perchlorates  |
| SGG14                  | 14                  | permanganates   |
| SGG15                  | 15                  | powdered metals   |
| SGG16                  | 16                  | peroxides   |
| SGG17                  | 17                  | azides  |
| SGG18                  | 18                  | alkalis   |

7.2.5.3 It is recognized that not all substances, mixtures, solutions or preparations falling within a segregation group are listed in the IMDG Code by name. These are shipped under N.O.S. entries. Although these N.O.S. entries are not themselves listed in the segregation groups (see 3.1.4.4), the consignor shall decide whether inclusion under the segregation group is appropriate and, if so, shall mention that fact in the transport document (see 5.4.1.5.11).

7.2.5.4 The segregation groups in this Code do not cover substances which fall outside the classification criteria of this Code. It is recognized that some non-hazardous substances have similar chemical properties as substances listed in the segregation groups. A consignor or the person responsible for packing the goods into a cargo transport unit who does have knowledge of the chemical properties of such non-dangerous goods may decide to implement the segregation requirements of a related segregation group on a voluntary basis.

## 7.2.6 Special segregation provisions and exemptions

7.2.6.1 Notwithstanding 7.2.3.3 and 7.2.3.4, substances of the same class may be stowed together without regard to segregation required by secondary hazards (subsidiary hazard label(s)), provided that the substances do not react dangerously with each other and cause:

- .1 combustion and/or evolution of considerable heat;
- .2 evolution of flammable, toxic or asphyxiant gases;
- .3 the formation of corrosive substances; or
- .4 the formation of unstable substances.

7.2.6.2 Where the Dangerous Goods List specifies that “segregation as for class ...” applies, the segregation provisions applicable to that class in 7.2.4 shall be applied. However, for the purposes of interpreting 7.2.6.1, which permits substances of the same class to be stowed together provided they do not react dangerously with each other, the segregation provisions of the class as represented by the primary hazard class in the Dangerous Goods List shall be applied.

For example:

UN 2965 – BORON TRIFLUORIDE DIMETHYL ETHERATE, class 4.3

The Dangerous Goods List entry specifies "SG5 ("segregation as for class 3)", "SG8 (stow "away from" class 4.1)", "SG13 (stow "away from class 8)", "SG25 (stow "separated from" goods of classes 2.1 and 3)" and "SG26 (in addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6m athwartship shall be maintained.)"

For the purposes of establishing the segregation provisions applicable in 7.2.4, the class 3 column shall This substance may be stowed together with other class 4.3 substances where they do not react dangerously with each other, see 7.2.6.1.

7.2.6.3 No segregation needs to be applied:

- .1 between dangerous goods of different classes which comprise the same substance but vary only in their water content, such as sodium sulphide in classes 4.2 and 8 or for class 7 if the difference is due to quantity only;
- .2 between dangerous goods which belong to a group of substances of different classes but for which scientific evidence exists that they do not react dangerously when in contact with each other. Substances within the same table 7.2.6.3.1, 7.2.6.3.2 or 7.2.6.3.3 are compatible with one another; and
- .3 to substances within the table 7.2.6.3.4, except that due regard shall continue to be taken of the dangerous reactions specified in the provisions of 7.2.6.1.1 to 7.2.6.1.4.

Table 7.2.6.3.1

| UN   | Proper shipping name   | Class | Subsidiary hazard(s) | Packing group |
|------|--|-------|----------------------|---------------|
| 2014 | HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary) | 5.1   | 8                    | II            |
| 2984 | HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 8% but less than 20% hydrogen peroxide (stabilized as necessary)      | 5.1   |                      | III           |
| 3105 | ORGANIC PEROXIDE TYPE D, LIQUID (peroxyacetic acid, type D, stabilized)  | 5.2   | 8                    |               |
| 3107 | ORGANIC PEROXIDE TYPE E, LIQUID (peroxyacetic acid, type E, stabilized)  | 5.2   | 8                    |               |
| 3109 | ORGANIC PEROXIDE TYPE F, LIQUID (peroxyacetic acid, type F, stabilized)  | 5.2   | 8                    |               |
| 3149 | HYDROGEN PEROXIDE AND PEROXYACETIC ACID, MIXTURE with acid(s), water and not more than 5% peroxyacetic acid, STABILIZED      | 5.1   | 8                    | II            |

Table 7.2.6.3.2

| UN   | Proper shipping name  | Class | Subsidiary hazard(s) | Packing group |
|------|-----------------------|-------|----------------------|---------------|
| 1295 | TRICHLOROSILANE       | 4.3   | 3/8                  | I             |
| 1818 | SILICON TETRACHLORIDE | 8     | –                    | II            |
| 2189 | DICHLOROSILANE        | 2.3   | 2.1/8                | –             |

Table 7.2.6.3.3

| UN   | Proper shipping name  | Class | Subsidiary hazard(s) | Packing group |
|------|---|-------|----------------------|---------------|
| 3391 | ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC                   | 4.2   |                      | I             |
| 3392 | ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC                  | 4.2   |                      | I             |
| 3393 | ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE   | 4.2   | 4.3                  | I             |
| 3394 | ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE  | 4.2   | 4.3                  | I             |
| 3395 | ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE               | 4.3   |                      | I, II, III    |
| 3396 | ORGANOMETALLIC SUBSTANCE, SOLID, WATER REACTIVE, FLAMMABLE    | 4.3   | 4.1                  | I, II, III    |
| 3397 | ORGANOMETALLIC SUBSTANCE, SOLID, WATER REACTIVE, SELF-HEATING | 4.3   | 4.2                  | I, II, III    |
| 3398 | ORGANOMETALLIC SUBSTANCE, LIQUID, WATER REACTIVE              | 4.3   |                      | I, II, III    |
| 3399 | ORGANOMETALLIC SUBSTANCE, LIQUID, WATER REACTIVE, FLAMMABLE   | 4.3   | 3                    | I, II, III    |
| 3400 | ORGANOMETALLIC SUBSTANCE, SOLID, SELF-HEATING                 | 4.2   |                      | II, III       |

Table 7.2.6.3.4

| UN*  | Proper shipping name   | Class | Subsidiary hazard(s) | Packing group |
|------|--|-------|----------------------|---------------|
| 1325 | FLAMMABLE SOLID, ORGANIC, N.O.S. with a technical name as listed in 2.5.3.2.4 under "exempt" | 4.1   | None                 | II, III       |
| 3101 | ORGANIC PEROXIDE TYPE B, LIQUID  | 5.2   | 1 and/or 8           | –             |
| 3102 | ORGANIC PEROXIDE TYPE B, SOLID   | 5.2   | 1 and/or 8           | –             |
| 3103 | ORGANIC PEROXIDE TYPE C, LIQUID  | 5.2   | None or 8            | –             |
| 3104 | ORGANIC PEROXIDE TYPE C, SOLID   | 5.2   | None or 8            | –             |
| 3105 | ORGANIC PEROXIDE TYPE D, LIQUID  | 5.2   | None or 8            | –             |
| 3106 | ORGANIC PEROXIDE TYPE D, SOLID   | 5.2   | None or 8            | –             |
| 3107 | ORGANIC PEROXIDE TYPE E, LIQUID  | 5.2   | None or 8            | –             |
| 3108 | ORGANIC PEROXIDE TYPE E, SOLID   | 5.2   | None or 8            | –             |
| 3109 | ORGANIC PEROXIDE TYPE F, LIQUID  | 5.2   | None or 8            | –             |
| 3110 | ORGANIC PEROXIDE TYPE F, SOLID   | 5.2   | None or 8            | –             |
| 3111 | ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED                                      | 5.2   | 1 and/or 8           | –             |
| 3112 | ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED                                       | 5.2   | 1 and/or 8           | –             |
| 3113 | ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED                                      | 5.2   | None or 8            | –             |
| 3114 | ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED                                       | 5.2   | None or 8            | –             |
| 3115 | ORGANIC PEROXIDE TYPE D, LIQUID, TEMPERATURE CONTROLLED                                      | 5.2   | None or 8            | –             |
| 3116 | ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED                                       | 5.2   | None or 8            | –             |
| 3117 | ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED                                      | 5.2   | None or 8            | –             |

| UN*  | Proper shipping name                                    | Class | Subsidiary hazard(s) | Packing group |
|------|---|-------|----------------------|---------------|
| 3118 | ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED  | 5.2   | None or 8            | –             |
| 3119 | ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED | 5.2   | None or 8            | –             |
| 3120 | ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED  | 5.2   | None or 8            | –             |

\* Except for substances with the technical name PEROXYACETIC ACID

△ 7.2.6.4 Notwithstanding table 7.2.6.3.4, due regard shall continue to be taken of the dangerous reactions specified in the provisions of 7.2.6.1.1 to 7.2.6.1.4.

7.2.6.5 Notwithstanding the provisions of 7.2.5, substances of class 8, packing group II or III, that would otherwise be required to be segregated from one another due to the provisions pertaining to segregation groups as identified by an entry in column 16b of the Dangerous Goods List indicating “away from” or “separated from” “acids” or “away from” or “separated from” “alkalis”, may be transported in the same cargo transport unit, whether in the same packaging or not, provided:

- .1 the substances comply with the provisions of 7.2.6.1;
- .2 the package does not contain more than 30 L for liquids or 30 kg for solids;
- .3 the transport document includes the statement required by 5.4.1.5.11.3; and
- .4 a copy of the test report that verifies that the substances do not react dangerously with each other shall be provided if requested by the competent authority.

## 7.2.7 Segregation of goods of class 1

### 7.2.7.1 Segregation between goods of class 1

7.2.7.1.1 Goods of class 1 may be stowed within the same compartment or hold, or closed cargo transport unit as indicated in 7.2.7.1.4. In other cases, they shall be stowed in separate compartments or holds, or closed cargo transport units.

7.2.7.1.2 When goods requiring different stowage arrangements are permitted by 7.2.7.1.4 to be transported in the same compartment or hold, or closed cargo transport unit, the appropriate stowage arrangement shall conform to the most stringent provisions for the entire load.

7.2.7.1.3 Where a mixed load of different divisions is transported within the same compartment or hold, or closed cargo transport unit, the entire load shall be treated as if belonging to the hazard division in the order 1.1 (most dangerous), 1.5, 1.2, 1.3, 1.6 and 1.4 (least dangerous) and the stowage arrangement shall conform to the most stringent provisions for the entire load.

#### 7.2.7.1.4 Permitted mixed stowage for goods of class 1

| Compatibility group | A | B | C              | D              | E              | F | G              | H | J | K | L              | N              | S              |
|---------------------|---|---|----------------|----------------|----------------|---|----------------|---|---|---|----------------|----------------|----------------|
| A                   | X |   |                |                |                |   |                |   |   |   |                |                |                |
| B                   |   | X |                |                |                |   |                |   |   |   |                |                | X              |
| C                   |   |   | X              | X <sup>6</sup> | X <sup>6</sup> |   | X <sup>1</sup> |   |   |   |                | X <sup>4</sup> | X              |
| D                   |   |   | X <sup>6</sup> | X              | X <sup>6</sup> |   | X <sup>1</sup> |   |   |   |                | X <sup>4</sup> | X              |
| E                   |   |   | X <sup>6</sup> | X <sup>6</sup> | X              |   | X <sup>1</sup> |   |   |   |                | X <sup>4</sup> | X              |
| F                   |   |   |                |                |                | X |                |   |   |   |                |                | X              |
| G                   |   |   | X <sup>1</sup> | X <sup>1</sup> | X <sup>1</sup> |   | X              |   |   |   |                |                | X              |
| H                   |   |   |                |                |                |   |                | X |   |   |                |                | X              |
| J                   |   |   |                |                |                |   |                |   | X |   |                |                | X              |
| K                   |   |   |                |                |                |   |                |   |   | X |                |                | X              |
| L                   |   |   |                |                |                |   |                |   |   |   | X <sup>2</sup> |                |                |
| N                   |   |   | X <sup>4</sup> | X <sup>4</sup> | X <sup>4</sup> |   |                |   |   |   |                | X <sup>3</sup> | X <sup>5</sup> |
| S                   |   | X | X              | X              | X              | X | X              | X | X | X |                | X <sup>5</sup> | X              |

"X" indicates that goods of the corresponding compatibility groups may be stowed in the same compartment, hold, or closed cargo transport unit.

**Notes**

- <sup>1</sup> Explosive articles in compatibility group G (other than fireworks and those requiring special stowage) may be stowed with explosive articles of compatibility groups C, D and E provided no explosive substances are transported in the same compartment or hold, or closed cargo transport unit.
- <sup>2</sup> A consignment of one type in compatibility group L shall only be stowed with a consignment of the same type within compatibility group L.
- <sup>3</sup> Different types of articles of Division 1.6, compatibility group N, may only be transported together when it is proven that there is no additional risk of sympathetic detonation between the articles. Otherwise they shall be treated as division 1.1.
- <sup>4</sup> When articles of compatibility group N are transported with articles or substances of compatibility groups C, D or E, the goods of compatibility group N shall be treated as compatibility group D.
- <sup>5</sup> When articles of compatibility group N are transported together with articles or substances of compatibility group S, the entire load shall be treated as compatibility group N.
- <sup>6</sup> Any combination of articles in compatibility groups C, D and E shall be treated as compatibility group E. Any combination of substances in compatibility groups C and D shall be treated as the most appropriate compatibility group shown in 2.1.2.3, taking into account the predominant characteristics of the combined load. This overall classification code shall be displayed on any label or placard placed on a unit load or closed cargo transport unit as prescribed in 5.2.2.2.2.

**7.2.7.1.5** Closed cargo transport units carrying different goods of class 1 do not require segregation from each other provided 7.2.7.1.4 authorizes the goods to be transported together. Where this is not permitted, closed cargo transport unit shall be “separated from” one another.

**7.2.7.2 Segregation from goods of other classes**

**7.2.7.2.1** Notwithstanding the segregation provisions of this chapter, AMMONIUM NITRATE (UN 1942), AMMONIUM NITRATE BASED FERTILIZER (UN 2067), alkali metal nitrates (e.g. UN 1486) and alkaline earth metal nitrates (e.g. UN 1454) may be stowed together with blasting explosives (except EXPLOSIVE, BLASTING, TYPE C, UN 0083) provided the aggregate is treated as blasting explosives under class 1.

**Note:** Alkali metal nitrates include caesium nitrate (UN 1451), lithium nitrate (UN 2722), potassium nitrate (UN 1486), rubidium nitrate (UN 1477) and sodium nitrate (UN 1498). Alkaline earth metal nitrates include barium nitrate (UN 1446), beryllium nitrate (UN 2464), calcium nitrate (UN 1454), magnesium nitrate (UN 1474) and strontium nitrate (UN 1507).

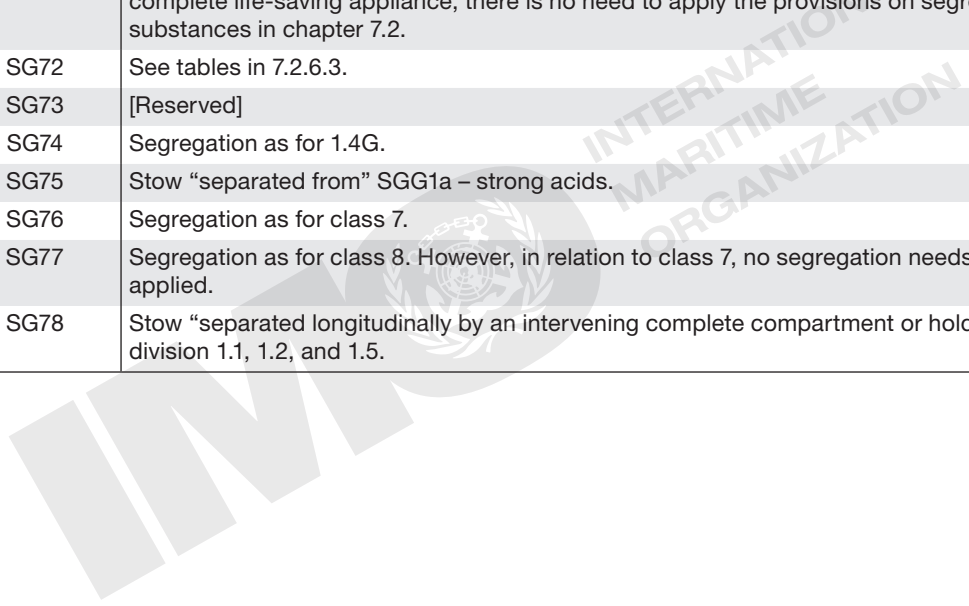
**7.2.8 Segregation codes**

The segregation codes given in column 16b of the Dangerous Goods List are as specified below:

| Segregation code | Description  |
|------------------|--|
| SG1              | For packages carrying a subsidiary hazard label of class 1, segregation as for class 1, division 1.3. However, in relation to goods of class 1, segregation as for the primary hazard. |
| SG2              | Segregation as for class 1.2G.   |
| SG3              | Segregation as for class 1.3G.   |
| SG4              | Segregation as for class 2.1.  |
| SG5              | Segregation as for class 3.  |
| SG6              | Segregation as for class 5.1.  |
| SG7              | Stow “away from” class 3.  |
| SG8              | Stow “away from” class 4.1.  |
| SG9              | Stow “away from” class 4.3.  |
| SG10             | Stow “away from” class 5.1.  |
| SG11             | Stow “away from” class 6.2.  |
| SG12             | Stow “away from” class 7.  |
| SG13             | Stow “away from” class 8.  |
| SG14             | Stow “separated from” class 1 except for division 1.4S.  |
| SG15             | Stow “separated from” class 3.   |
| SG16             | Stow “separated from” class 4.1.   |
| SG17             | Stow “separated from” class 5.1.   |
| SG18             | Stow “separated from” class 6.2.   |
| SG19             | Stow “separated from” class 7.   |
| SG20             | Stow “away from” SGG1 – acids.   |
| SG21             | Stow “away from” SGG18 – alkalis.  |

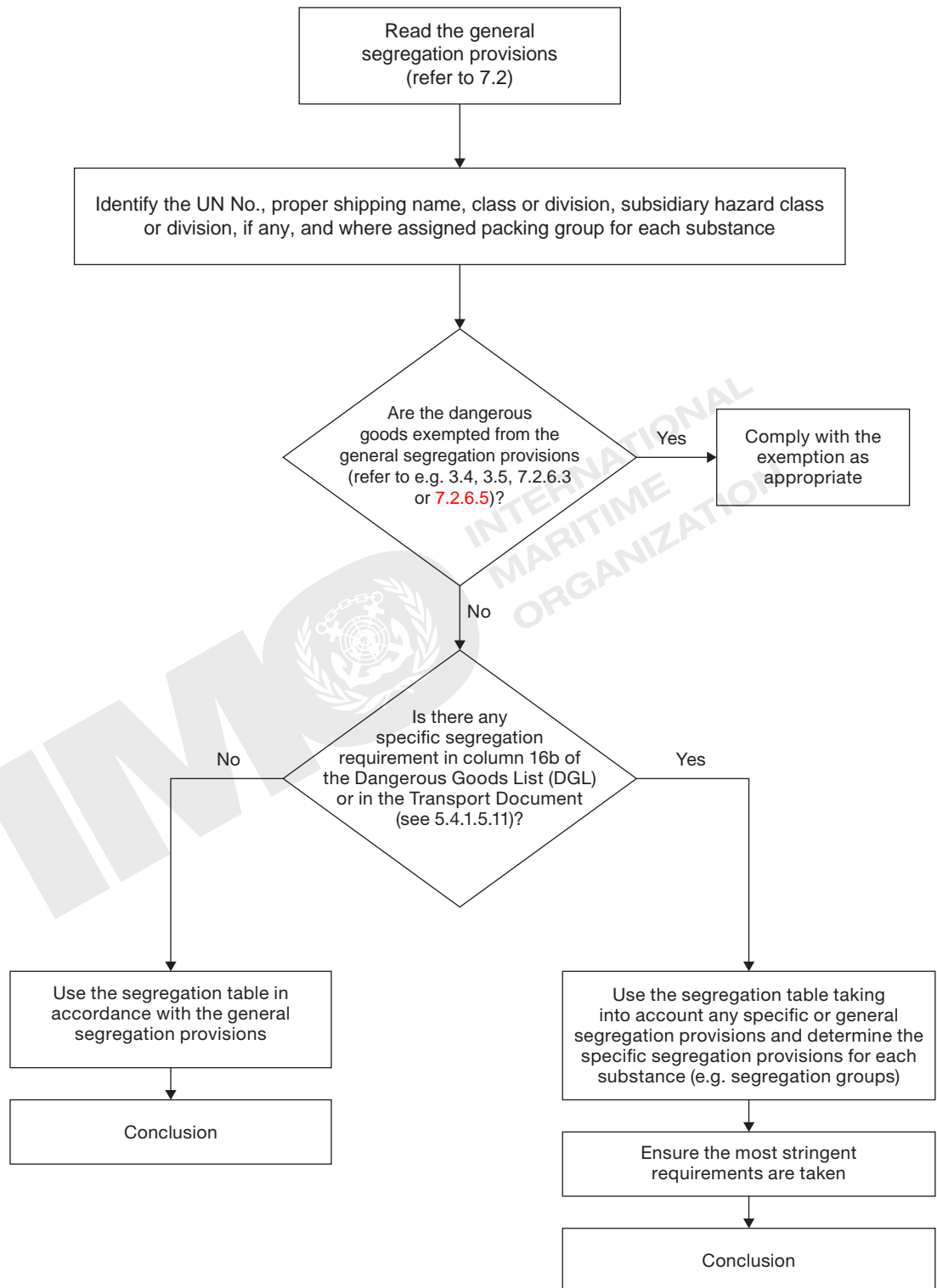
| Segregation code | Description   |
|------------------|---|
| SG22             | Stow “away from” ammonium salts.  |
| SG23             | Stow “away from” animal or vegetable oils.  |
| SG24             | Stow “away from” SGG17 – azides.  |
| SG25             | Stow “separated from” goods of classes 2.1 and 3.   |
| SG26             | In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. |
| △ SG27           | Stow “separated from” explosives containing chlorates or perchlorates.  |
| △ SG28           | Stow “separated from” SGG2 – ammonium compounds and explosives containing ammonium compounds or salts.  |
| SG29             | Segregation from foodstuffs as in 7.3.4.2.2, 7.6.3.1.2 or 7.7.3.7.  |
| SG30             | Stow “away from” SGG7 – heavy metals and their salts.   |
| SG31             | Stow “away from” SGG9 – lead and its compounds.   |
| SG32             | Stow “away from” SGG10 – liquid halogenated hydrocarbons.   |
| SG33             | Stow “away from” SGG15 – powdered metals.   |
| △ SG34           | When containing ammonium compounds, “separated from” SGG4 – chlorates or SGG13 – perchlorates and explosives containing chlorates or perchlorates.  |
| SG35             | Stow “separated from” SGG1 – acids.   |
| SG36             | Stow “separated from” SGG18 – alkalis.  |
| SG37             | Stow “separated from” ammonia.  |
| SG38             | Stow “separated from” SGG2 – ammonium compounds.  |
| SG39             | Stow “separated from” SGG2 – ammonium compounds other than AMMONIUM PERSULPHATE (UN 1444).  |
| SG40             | Stow “separated from” SGG2 – ammonium compounds other than mixtures of ammonium persulphates and/or potassium persulphates and/or sodium persulphates.  |
| SG41             | Stow “separated from” animal or vegetable oil.  |
| SG42             | Stow “separated from” SGG3 – bromates.  |
| SG43             | Stow “separated from” bromine.  |
| SG44             | Stow “separated from” CARBON TETRACHLORIDE (UN 1846).   |
| SG45             | Stow “separated from” SGG4 – chlorates.   |
| SG46             | Stow “separated from” chlorine.   |
| SG47             | Stow “separated from” SGG5 – chlorites.   |
| △ SG48           | Stow “separated from” combustible material (particularly liquids).  |
| SG49             | Stow “separated from” SGG6 – cyanides.  |
| SG50             | Segregation from foodstuffs as in 7.3.4.2.1, 7.6.3.1.2 or 7.7.3.6.  |
| SG51             | Stow “separated from” SGG8 – hypochlorites.   |
| SG52             | Stow “separated from” iron oxide.   |
| △ SG53           | Shall not be stowed together with combustible material in the same cargo transport unit.  |
| SG54             | Stow “separated from” SGG11 – mercury and mercury compounds.  |
| SG55             | Stow “separated from” mercury salts.  |
| SG56             | Stow “separated from” SGG12 – nitrites.   |
| SG57             | Stow “separated from” odour-absorbing cargoes.  |
| SG58             | Stow “separated from” SGG13 – perchlorates.   |
| SG59             | Stow “separated from” SGG14 – permanganates.  |
| SG60             | Stow “separated from” SGG16 – peroxides.  |
| SG61             | Stow “separated from” SGG15 – powdered metals.  |
| SG62             | Stow “separated from” sulphur.  |

| Segregation code | Description  |
|------------------|--|
| SG63             | Stow “separated longitudinally by an intervening complete compartment or hold from” class 1.   |
| SG64             | [Reserved]   |
| SG65             | Stow “separated by a complete compartment or hold from” class 1 except for division 1.4.   |
| SG66             | [Reserved]   |
| SG67             | Stow “separated from” division 1.4 and “separated longitudinally by an intervening complete compartment or hold from” divisions 1.1, 1.2, 1.3, 1.5 and 1.6 except from explosives of compatibility group J.  |
| SG68             | If flashpoint 60°C c.c. or below, segregation as for class 3 but “away from” class 4.1.  |
| SG69             | For AEROSOLS with a maximum capacity of 1 L: segregation as for class 9.<br>Stow “separated from” class 1 except for division 1.4.<br>For AEROSOLS with a capacity above 1 L: segregation as for the appropriate subdivision of class 2.<br>For WASTE AEROSOLS: segregation as for the appropriate subdivision of class 2. |
| SG70             | For arsenic sulphides, “separated from” SGG1 – acids.  |
| SG71             | Within the appliance, to the extent that the dangerous goods are integral parts of the complete life-saving appliance, there is no need to apply the provisions on segregation of substances in chapter 7.2.   |
| SG72             | See tables in 7.2.6.3.   |
| SG73             | [Reserved]   |
| SG74             | Segregation as for 1.4G.   |
| SG75             | Stow “separated from” SGG1a – strong acids.  |
| SG76             | Segregation as for class 7.  |
| SG77             | Segregation as for class 8. However, in relation to class 7, no segregation needs to be applied.   |
| SG78             | Stow “separated longitudinally by an intervening complete compartment or hold from” division 1.1, 1.2, and 1.5.  |



**Annex**  
**Segregation flow chart**

The use of this chart is not mandatory and is provided for information purposes only.



## Examples

The following examples only illustrate the process of segregation. Subsequent additional provisions of this Code may apply (e.g. 7.3.4).

- 1 Segregation of 300 kg of celluloid, scrap (UN 2002) in one drum and 200 L of epibromohydrin (UN 2558) in one drum.
  - .1 According to the Dangerous Goods List, UN 2002 is class 4.2, PG III, and UN 2558 is class 6.1, PG I and has a subsidiary hazard of class 3.
  - .2 Neither are exempted by 3.4, 3.5, 7.2.6.3 or 7.2.6.5.
  - .3 There are no specific segregation requirements for these substances in column 16b of the Dangerous Goods List.
  - .4 According to the segregation table given in 7.2.4 for classes 4.2 and 6.1, the intersecting box shows number 1, whereas for classes 4.2 and 3, the intersecting box shows a number 2. The value 2 is the more stringent, therefore the substances are required to be “separated from” one another.
- 2 Segregation of 50 kg of potassium perchlorate (UN 1489) in one drum and 50 kg of nickel cyanide (UN 1653) in one drum.
  - .1 According to the Dangerous Goods List, UN 1489 is class 5.1, PG II and UN 1653 is class 6.1, PG II.
  - .2 Neither are exempted by 3.4, 3.5, 7.2.6.3 or 7.2.6.5.
  - .3 For UN 1489, column 16b of the Dangerous Goods List states “SG38” (“separated from” ammonium compounds other than AMMONIUM PERSULPHATE (UN 1444)) and “SG49” (“separated from” cyanides).
  - .4 For UN 1653, column 16b of the Dangerous Goods List states “SG35” (“separated from” acids).
  - .5 According to the segregation table given in 7.2.4 for classes 5.1 and 6.1, the intersecting box shows an “1”.
  - .6 According to the segregation groups in section 3.1.4, UN 1653 is listed in group 6 (cyanides).
  - .7 Therefore, the substances are required to be “separated from” one another.
- 3 Segregation of 10 kg of acetone (UN 1090) in one box and 20 kg of ethyldichlorosilane (UN 1183) in another box.
  - .1 According to the Dangerous Goods List, UN 1090 is class 3, PG II.
  - .2 According to the Dangerous Goods List, UN 1183 is class 4.3, PG I and has subsidiary hazards of classes 3 and 8.
  - .3 Neither are exempted by 3.4, 3.5, 7.2.6.3 or 7.2.6.5.
  - .4 UN 1090 has no specific segregation requirements in column 16b.
  - .5 For UN 1183, column 16b of the Dangerous Goods List states “SG5” (segregation as for class 3), “SG8” (“away from” class 4.1), “SG13” (“away from” class 8), “SG25” (“separated from” goods of classes 2.1 and 3) and “SG26” (in addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained).
  - .6 According to the segregation table given in 7.2.4, the intersecting box shows an “X” for classes 3 and 3, but as UN 1183 is required to be “separated from” class 3, the substances are required to be “separated from” one another. In addition, when these substances are stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, and when they are stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.
- 4 Segregation of 10 kg of adhesives (UN 1133, PG III) in limited quantities and 40 kg of beryllium nitrate (UN 2464) in the same freight container.
  - .1 According to the Dangerous Goods List, UN 1133 is class 3, PG III.
  - .2 According to the Dangerous Goods List, UN 2464 is class 5.1, PG II and has a subsidiary hazard of class 6.1.
  - .3 According to section 3.4, UN 1133 in limited quantities is exempted from the segregation provisions of part 7.
  - .4 Therefore, no segregation requirements shall apply.