

Segregation of Dangerous Goods for Sea Transport (Based on the IMDG 2020 Edition)



The provisions shown in the Segregation Table are only general provisions and the List of Dangerous Goods or SDS of the substance should be consulted for more specific segregation requirements.
Subsidiary Hazards must be taken into account for segregation.

TABLE 7.2.4 IMDG 2020	1.5 Explosives		1.6 Explosives		1.4 Explosives	Flammable gas	Non-flammable gas	Toxic gas	Flammable liquid	Flammable solid	SPONTANEOUSLY COMBUSTIBLE	Dangerous when wet	OXIDIZER	ORGANIC PEROXIDE	Toxic	Infectious substance	RADIOACTIVE	CORROSIVE	Miscellaneous	Foodstuffs	
	1.1	1.2	1.3	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		
1.5	1.1	1.2	1.3	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	Foodstuffs	
1.5	•	•	•	•	•	4	2	2	4	4	4	4	4	4	2	4	2	4	✓	✓	
1.6	•	•	•	•	•	4	2	2	4	3	3	4	4	4	2	4	2	2	✓	✓	
1.4	•	•	•	•	•	2	1	1	2	2	2	2	2	2	✓	4	2	2	✓	✓	
2.1	4	4	2	✓	✓	✓	2	1	2	2	2	2	2	✓	4	2	1	✓	✓	✓	
2.2	2	2	1	✓	✓	✓	1	✓	1	✓	✓	✓	1	✓	2	1	✓	✓	✓	✓	
2.3	2	2	1	✓	✓	✓	2	✓	2	✓	✓	✓	2	✓	2	1	✓	✓	✓	See right	
3	4	4	2	2	1	2	✓	✓	2	2	2	2	2	✓	3	2	✓	✓	✓	✓	
4.1	4	3	2	1	✓	✓	✓	✓	1	✓	1	2	2	✓	3	2	1	✓	✓	✓	
4.2	4	3	2	2	1	2	2	1	✓	1	2	2	2	1	3	2	1	✓	✓	✓	
4.3	4	4	2	2	✓	✓	2	✓	1	✓	2	2	✓	2	2	1	✓	✓	✓	✓	
5.1	4	4	2	2	✓	✓	2	1	2	2	✓	2	1	3	1	2	✓	✓	✓	✓	
5.2	4	4	2	2	1	2	2	2	2	2	2	2	✓	1	3	2	2	✓	✓	✓	
6.1	2	2	✓	✓	✓	✓	✓	✓	1	✓	1	1	✓	1	✓	✓	✓	✓	✓	See right	
6.2	4	4	4	4	2	2	3	3	3	2	3	3	1	✓	3	3	✓	✓	✓	See right	
7	2	2	2	2	1	1	2	2	2	2	1	2	✓	3	✓	2	✓	✓	✓	See right	
8	4	2	2	1	✓	✓	✓	1	1	1	2	2	✓	3	2	✓	✓	✓	✓	See right	
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

GENERAL CARGO SHIPS (such as supply vessels) SEGREGATION (7.6.3 of the IMDG)	
✓	The segregation, if any, is shown in the Dangerous Goods List - Column 16 or determined from the SDS.
1	AWAY FROM: Effectively segregated so that the incompatible goods cannot interact dangerously in the event of an accident but may be transported in the same compartment or hold or on deck provided a minimum horizontal separation of 3 metres , projected vertically, is between them. Note: If segregation is between a closed CTU and a package or two closed CTUs NO segregation is required.
2	SEPARATED FROM: <i>Under deck</i> - In separate holds or compartments. A vertical separation is acceptable as long as the compartment deck is resistant to fire and liquids. <i>On deck</i> - a minimum distance of 6 metres horizontally is required between the two goods. Note: If segregation is between a closed CTU and a package or two closed CTUs, the segregation requirement drops to 3m.
3	SEPARATED BY A COMPLETE COMPARTMENT OR HOLD FROM: Segregated either vertically or horizontally. If the decks are not fire and liquid resistant then only horizontal separation is allowed. <i>On deck</i> - a minimum horizontal distance of 12 metres is required and also if one package is on deck and the other is in a upper hold.
4	SEPARATED LONGITUDINALLY BY AN INTERVENING COMPLETE COMPARTMENT OR HOLD FROM: Between a package <i>on deck</i> and one <i>under deck</i> a minimum distance of 24 metres including a complete hold or compartment must be maintained. <i>On deck</i> the minimum distance of 24 metres must be maintained. Vertically stowage is not allowed.
•	See Reverse - PERMITTED MIXED STOWAGE FOR GOODS OF CLASS 1 (7.2.7.1 of the IMDG)
LIMITED QUANTITIES & EXCEPTED QUANTITIES The segregation requirements of this section do not apply to packages consigned as Limited or Excepted Quantities. Segregation within packages should be determined from the substances MSDS (3.4.4 & 3.5.8 IMDG).	
SEGREGATION WITHIN CTU's Dangerous Goods showing ANY segregation requirement in the Table shall NOT BE transported in the same Cargo Transport Unit with the exception of "Away From" (1) segregation, provided competent authority approval has been obtained for these goods (7.3.4 IMDG).	

FOODSTUFFS

PG = Packing Group

Chapters 7.3.4.2 & 7.7.3

DGs NOT TO BE TRANSPORTED IN THE SAME CTU or BARGE AS FOODSTUFFS				
2.3 Toxic gas	6.1, PG I & II Toxic	6.2 Infectious substance	7 RADIOACTIVE 1	8, PG I CORROSIVE
(N/A to Excepted Packages of Class 7)				Displaying a reference to 7.3.4.2.1 (CTU) or 7.7.3.6 (barges) in Column 16b of the DG List
DGs THAT MAY BE TRANSPORTED 3 Meters AWAY IN THE SAME CTU or BARGE				
6.1, PG III Toxic	8, PG II CORROSIVE	8, PG III CORROSIVE	Displaying a reference to 7.3.4.2.2 (CTU) or 7.7.3.7 (barges) in Column 16b of the DG List	3 Meter
Primary or Sub-risk	Primary only	Primary or Sub-risk		

Segregation requirements from foodstuffs on GENERAL CARGO SHIPS Chapter 7.6.3.1

Class/Division of Hazard (Primary or sub-risk)	Stowage Requirement		
	Away From (3 m)	Separated From (6 m)	Separated by a complete compartment or hold from (12 m)
2.3 - Toxic Gas	(If in closed CTU)	X	
6.1 - Toxic Substances	(If in closed CTU)	X	
6.2 - Infectious Substances		(If in closed CTU)	X
7 - Radioactive Material (Not applicable to Excepted Packages)	(If in closed CTU)	X	
8 - Corrosive	(If in closed CTU)	X	
Displaying the term "Separated from" In Column 16	(If in closed CTU)	X	

Notes:

- The requirements above relate to **stowage on deck or in the same compartment or hold**,
- "If in closed CTU" means either the DG or the foodstuffs is in a closed CTU, but not together.
- If dangerous goods and foodstuffs are in different closed CTUs then no segregation is required.

Applies to: Freight containers carried on deck or below deck on FULL CONTAINER CARRYING SHIPS, or other ships which can accommodate PERMANENT CONTAINER STOWAGE during transport, incorporating dangerous goods.
 Container space means a distance of not less than 6 metres fore and aft or not less than 2.4 metres across the ship (Athwartships).
 Note: Can also be applied to CTU storage areas.

Segregation of cargo transport units on board container ships with closed cargo holds (7.4.3.2 IMDG)

SEGREGATION REQUIREMENT	VERTICAL			HORIZONTAL							
	CLOSED VERSUS CLOSED	CLOSED VERSUS OPEN	OPEN VERSUS OPEN	CLOSED VERSUS CLOSED		CLOSED VERSUS OPEN		OPEN VERSUS OPEN			
				ON DECK	UNDER DECK	ON DECK	UNDER DECK	ON DECK	UNDER DECK		
"AWAY FROM" .1	ONE ON TOP OF THE OTHER PERMITTED	OPEN ON TOP OF CLOSED PERMITTED OTHERWISE AS FOR "OPEN VERSUS OPEN"	NOT IN THE SAME VERTICAL LINE UNLESS SEGREGATED BY A DECK	FORE AND AFT	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	
"SEPERATED FROM" .2	NOT IN THE SAME VERTICAL LINE UNLESS SEGREGATED BY A DECK	AS FOR "OPEN VERSUS OPEN"		ATHWARTSHIPS	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	ONE CONTAINER SPACE	ONE CONTAINER SPACE
				FORE AND AFT	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE	ONE BULKHEAD	
"SEPERATED BY A COMPLETE COMPARTMENT OR HOLD FROM" .3	NOT IN THE SAME VERTICAL LINE UNLESS SEGREGATED BY A DECK	AS FOR "OPEN VERSUS OPEN"		ATHWARTSHIPS	ONE CONTAINER SPACE	ONE CONTAINER SPACE	ONE CONTAINER SPACE	TWO CONTAINER SPACES	TWO CONTAINER SPACES	ONE BULKHEAD	
"SEPERATED LONGITUDINALLY BY AN INTERVENING COMPLETE COMPARTMENT OR HOLD FROM" .4*			FORE AND AFT	ONE CONTAINER SPACE	ONE BULKHEAD	ONE CONTAINER SPACE	ONE BULKHEAD	TWO CONTAINER SPACES	TWO BULKHEADS		
				ATHWARTSHIPS	TWO CONTAINER SPACES	ONE BULKHEAD	TWO CONTAINER SPACES	ONE BULKHEAD	THREE CONTAINER SPACES	TWO BULKHEADS	
				FORE AND AFT	MINIMUM HORIZONTAL DISTANCE OF 24 METRES	ONE BULKHEAD AND MINIMUM HORIZONTAL DISTANCE OF 24 METRES	MINIMUM HORIZONTAL DISTANCE OF 24 METRES	TWO BULKHEADS	MINIMUM HORIZONTAL DISTANCE OF 24 METRES	TWO BULKHEADS	
				ATHWARTSHIPS	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	

* Containers not less than 6 metres from intervening bulkhead.
 NOTE: All bulkheads and decks shall be resistant to fire and liquid.

Segregation of cargo transport units on board hatchless container ships (7.4.3.3 IMDG)

SEGREGATION REQUIREMENT	VERTICAL			HORIZONTAL							
	CLOSED VERSUS CLOSED	CLOSED VERSUS OPEN	OPEN VERSUS OPEN	CLOSED VERSUS CLOSED		CLOSED VERSUS OPEN		OPEN VERSUS OPEN			
				ON DECK	UNDER DECK	ON DECK	UNDER DECK	ON DECK	UNDER DECK		
"AWAY FROM" .1	ONE ON TOP OF THE OTHER PERMITTED	OPEN ON TOP OF CLOSED PERMITTED OTHERWISE AS FOR "OPEN VERSUS OPEN"	NOT IN THE SAME VERTICAL LINE	FORE AND AFT	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	
"SEPERATED FROM" .2	NOT IN THE SAME VERTICAL LINE	AS FOR "OPEN VERSUS OPEN"		ATHWARTSHIPS	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	ONE CONTAINER SPACE	ONE CONTAINER SPACE
				FORE AND AFT	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	
"SEPERATED BY A COMPLETE COMPARTMENT OR HOLD FROM" .3	NOT IN THE SAME VERTICAL LINE	AS FOR "OPEN VERSUS OPEN"		ATHWARTSHIPS	ONE CONTAINER SPACE	ONE CONTAINER SPACE	TWO CONTAINER SPACES	TWO CONTAINER SPACES	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	
"SEPERATED LONGITUDINALLY BY AN INTERVENING COMPLETE COMPARTMENT OR HOLD FROM" .4			FORE AND AFT	ONE CONTAINER SPACE AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	ONE CONTAINER SPACE AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	TWO BULKHEADS		
				ATHWARTSHIPS	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	THREE CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	TWO BULKHEADS	
				FORE AND AFT	MINIMUM HORIZONTAL DISTANCE OF 24 METRES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD AND MINIMUM HORIZONTAL DISTANCE OF 24 METRES*	MINIMUM HORIZONTAL DISTANCE OF 24 METRES AND NOT IN OR ABOVE SAME HOLD	TWO BULKHEADS	MINIMUM HORIZONTAL DISTANCE OF 24 METRES AND NOT IN OR ABOVE SAME HOLD	TWO BULKHEADS	
				ATHWARTSHIPS	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	

* Containers not less than 6 metres from intervening bulkhead.
 NOTE: All bulkheads and decks shall be resistant to fire and liquid.

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	X	X	X	X	X	X	X	X	X	X	X
B	X	✓	X	X	X	X	X	X	X	X	X	X	✓
C	X	X	✓	✓ ⁶	✓ ⁶	X	✓ ¹	X	X	X	X	✓ ⁴	✓
D	X	X	✓ ⁶	✓	✓ ⁶	X	✓ ¹	X	X	X	X	✓ ⁴	✓
E	X	X	✓ ⁶	✓ ⁶	✓	X	✓ ¹	X	X	X	X	✓ ⁴	✓
F	X	X	X	X	X	✓	X	X	X	X	X	X	✓
G	X	X	✓ ¹	✓ ¹	✓ ¹	X	✓	X	X	X	X	X	✓
H	X	X	X	X	X	X	X	✓	X	X	X	X	✓
J	X	X	X	X	X	X	X	X	✓	X	X	X	✓
K	X	X	X	X	X	X	X	X	X	✓	X	X	✓
L	X	X	X	X	X	X	X	X	X	X	✓ ²	X	X
N	X	X	✓ ⁴	✓ ⁴	✓ ⁴	X	X	X	X	X	X	✓ ³	✓ ⁵
S	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓ ⁵	✓

✓ Indicates that goods of the corresponding compatibility groups MAY be stowed in the same compartment.
 (For explanation of notes see back of this form or 7.2.7.1.4 of IMDG).

CLASS 1 precedence of hazard (for placarding purposes)



PERMITTED MIXED STOWAGE FOR GOODS OF CLASS 1 - Notes for table

- '1' Explosive articles of compatibility group G (except fireworks and those which need special stowage) may be stowed with other explosive articles of compatibility groups C, D and E provided there are no explosive substances carried in the same compartment, portable magazine, freight container or vehicle.
- '2' A consignment of one type in compatibility group L should only be stowed with a consignment of the same type within compatibility group L.
- '3' 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 should be treated as division 1.1.
- '4' 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 should be treated as compatibility group D.
- '5' When articles of compatibility group N are transported together with articles or substances of compatibility group S, the entire load should be treated as compatibility group N.
- '6' Any combination of articles in compatibility groups C, D and E should be treated as compatibility group E. Any combination of substances in compatibility groups C and D should be treated as the most appropriate compatibility group shown in the compatibility group classification codes table (see classification), taking into account the predominant characteristics of the combined load. This overall classification code should be displayed on any label or placard placed on a unit load or cargo transport unit.

For Segregation requirements for Ro-Ro ships see Table of Segregation, IMDG Chapter 7.5

For Segregation requirements for Shipborne Barges see IMDG Chapter 7.7



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