

Safe Transport of Dangerous Goods by Air

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20-23 January 2020

Safe Transport of Dangerous Goods by Air

Part 3 – DG List Special Provisions



Doc 9284

Technical Instructions for the Safe
Transport of Dangerous Goods by Air

2019-2020 Edition



Approved and published by decision of the Council of ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

SAFE TRANSPORT OF DANGEROUS GOODS BY AIR



Doc 9284

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INTERNATIONAL CIVIL AVIATION ORGANIZATION

- **Part 3 = Dangerous Goods list, special provisions, limited and excepted quantities**
- ✓ **Chapter 1 - General**
- ✓ **Chapter 2 - Arrangement to the DGs list (Table 3-1)**
- ✓ **Chapter 3 - Special provisions**
- ✓ **Chapter 4 - DGs in limited quantities**
- ✓ **Chapter 5 - DGs packed in excepted quantities**

DANGEROUS GOODS LIST

- **General :**
- **The Dangerous Goods most commonly carried by air are listed in the Table 3-1 (commonly called "blue pages") (IATA Table 4.2)**
- **This List is not exhaustive, it's intended to cover, as far as practicable, all dangerous substances of commercial importance**
- **Each article or substance are listed by name and must be transported in accordance with the appropriate provisions in the List**
- **For those which do not appear specifically by name in the List, a "generic" or "not otherwise specified" entry may be used to permit their transport**
- **A "UN number" and a "proper shipping name" are assigned to each article or substance, in relation with their hazard class and composition**
- **Table 3-1 contains approximately ± 3000 articles or substances**

DANGEROUS GOODS LIST

➤ Abbreviations used :

Abbrevia tion	Column	Meaning
n.o.s.	1	Not otherwise specified
L	11 & 13	Litre(s)
kg	11 & 13	Kilogram(s)
G	11	Gross mass of package as prepared for transport
*	1	Entry which requires the addition of a technical name, between brackets, following the proper shipping name
†	1	Entry for which there is an explanation in the Attachment 2
≠		this symbol indicates changed text
+		this symbol indicates new or relocated text
>		this symbol indicates deleted text

➔ IATA parallel :  indicates a more restrictive requirement than ICAO

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Divided in 13 columns** - **from 1 to 13** (from A to N for the IATA DGR)

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Acetonitrile	1648	3		Liquid flammable			II	E2	353 Y341	5 L 1 L	364	60 L
Acetyl bromide	1716	8		Corrosive			II	E2	851 Y840	1 L 0.5 L	855	30 L

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Acetonitrile	1648	3		Liquid flammable			II	E2	353 Y341	5 L 1 L	364	60 L
Acetyl bromide	1716	8		Corrosive			II	E2	851 Y840	1 L 0.5 L	855	30 L

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**
- **Substances may have an entry for both the liquid and solid state, or for the solid and solution. These are allocated separate UN numbers**
- **Qualifying words as “molten” or “stabilized” must be added in case of substances are offered for transport in these states**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Dinitrotoluenes, liquid	2038	6.1		Toxic	US 4		II	E4	654 Y641	5 L 1 L	662	60 L
Dinitrotoluenes, molten	1600	6.1							FORBIDDEN		FORBIDDEN	
Dinitrotoluenes, solid	3454	6.1		Toxic	US 4		II	E4	669 Y644	25 kg 1 kg	676	100 kg

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**
- The proper shipping name can be **“generic”, or “not otherwise specified (n.o.s.*)”** (with the inclusion of an asterisk)
- ✓ They must be supplemented with the **technical or chemical group names**, on the package itself and on the documentation

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Mercaptan mixture, liquid, flammable, toxic, n.o.s.*	1228	3	6.1	Liquid flammable & Toxic	AU 1	A1	II	E0	FORBIDDEN		373	60 L
					CA 7	A3	III	E1	373	5 L	373	220 L
					IR 3	A36			Y373	1 L		
					NL 1							
					US 3							

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**
- The proper shipping name can be **“generic”, or “not otherwise specified (n.o.s.)”** (inclusion of an asterisk)
- They must be supplemented with the **technical or chemical group names**, on the package itself and on the documentation
- **e.g.:**
 - ✓ **UN 3394 : Organometallic substance, liquid, pyrophoric, water-reactive** (Trimethylgallium)
 - ✓ **UN 2902 : Pesticide, liquid, toxic, n.o.s.** (Drazoxolon)
 - ✓ **UN 1989 : Aldehydes, n.o.s.** (Veritasolybon)
 - ✓ **UN 1993 : Flammable liquid, n.o.s.** (contains xylene and benzene)

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**
- **Also can be included in « lightface » type:**
 - ✓ **other names by which certain articles and substances may be known; in such cases a cross reference to the proper shipping name is given**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Caffeine, see Alkaloids, etc.												
Cajeputene, see Dipentene												

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**
- **Also can be included in « lightface » type:**
 - ✓ **names of articles and substances which are forbidden for carriage by air under any circumstances** (not listed in IATA DGR)

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Nitroguanidine nitrate	FORBIDDEN											

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 1** (B for IATA): **DG Name (by alphabetic list), identified by its official designation (Proper Shipping Name), in « boldface » characters**

➤ **Also can be included in « lightface » type:**

✓ **names of articles and substances which are subject to additional considerations under special provisions**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Urea nitrate, dry or wetted with less than 20% water, by mass	0220	1.1D							FORBIDDEN		FORBIDDEN	
Urea nitrate, wetted with not less than 20% water, by mass	1357	4.1		Solid flammable	BE 3	A40 A101	I	E0	451	1 kg	451	15 kg
Urea nitrate, wetted with not less than 10% water, by mass	3370	4.1		Solid flammable	BE 3	A40	I	E0	451	0.5 kg	451	0.5 kg

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 2** (A for IATA): **UN number assigned to the article or substance under the United Nations classification system**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Aluminium bromide, anhydrous	1725	8		Corrosive			II	E2	859 Y844	15 kg 5 kg	863	50 kg
Aluminium bromide solution	2580	8		Corrosive		A3	III	E1	852 Y841	5 L 1 L	856	60 L
Aluminium carbide	1394	4.3		Danger if wet			II	E2	484 Y475	15 kg 5 kg	489	50 kg
Aluminium chloride, anhydrous	1726	8		Corrosive			II	E2	859 Y844	15 kg 5 kg	863	50 kg
Aluminium chloride solution	2581	8		Corrosive		A3	III	E1	852 Y841	5 L 1 L	856	60 L

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 2** (A for IATA): **UN number assigned to the article or substance under the United Nations classification system**
- **Entries in the list which have not been assigned such a UN number receive a temporary identification number (ID) in the 8000 series**
- **Numbers in the 8000 series must be identified with the “ID” prefix instead of the “UN” prefix**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Consumer commodity †	8000	9		Miscellaneous		A112			Y963	30 kg G	Y963	30 kg G

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 3** (C for IATA): **Class/Division (+ compatibility group for Class 1)**

➤ **Column 4** (C): **Subsidiary risk (if any)**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Barium perchlorate solution	3406	5.1	6.1	Oxidizer & Toxic		A3	II	E2	550	1 L	554	5 L
									Y540	0.5 L		
									551 Y541	2.5 L 1 L		
Articles, explosive, n.o.s.*	0353	1.4G		Explosive 1.4		A62		E0	FORBIDDEN		101	75 kg

DANGEROUS GOODS LIST – TABLE 3-1

➤ Column 5 (D): Labels



✓ Hazard label, and if necessary, subsidiary risk(s) label(s)

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Iodine	3495	8	6.1	Corrosive & Toxic		A113	III	E1	860 Y845	25 kg 5 kg	864	100 kg

✓ For Magnetized material, designated label



Magnetized material	2807	9		Magnetic				E0	953	No limit	953	No limit
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DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 6: State variations, notified by States from the Instructions, and listed in Attachment 3** (listed in 2;8 for IATA and in the associated P.I.)

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Bromobenzyl cyanides, liquid	1694	6.1		Toxic	AU 1 CA 7 IR 3 NL 1 US 3	A1 A29	I	E0	FORBIDDEN		658	30 L

➤ e.g.:

- ✓ **AU 1: Australia variation N°1**
- ✓ **CA 7: Canada variation N°7**
- ✓ **IR 3: Islamic Republic of Iran variation N°3**
- ✓ **NL 1: Netherlands variation N°1**
- ✓ **US 3: United States variation N°3**

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 7 (M): Special provisions, listed in the Table 3-2 (4;4), applying to all the packing groups permitted for a particular substance or article**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Alkali metal alcoholates, self-heating, corrosive, n.o.s.*	3206	4.2	8	Spontaneous combustion & Corrosive		A3 A84	II	E2	466	15 kg	470	50 kg
							III	E1	468	25 kg	471	100 kg

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Polyhalogenated terphenyls, liquid	3151	9		Miscellaneous		A11 A95	II	E2	964	100 L	964	220 L

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 7 (M): Special provisions, listed in the Table 3-2 (4;4), applying to all the packing groups permitted for a particular substance or article**
- **e.g.:**
 - ✓ **A10: This substance is not subject to these Instructions when it contains less than 30 per cent or not less than 90 per cent silicon**
 - ✓ **A20: During the course of transport this substance must be protected from direct sunlight and all sources of heat and be placed in an adequately ventilated area. A statement to this effect must be included in the Dangerous Goods Transport Document**
 - ✓ **A23: In the case of non-fissile or fissile excepted uranium hexafluoride, the material must be classified under UN 2978**
 - ✓ **A29: p-Bromobenzyl cyanide is not subject to these Instructions**
 - ✓ **A81: The quantity limits shown in columns 11 and 13 do not apply to body parts, organs or whole bodies**
 - ✓ **A100: Gasoline, motor spirit and petrol for use in spark-ignition engines (e.g. in automobiles, stationary engines and other engines) must be assigned to this entry regardless of variations in volatility**
 - ✓ **A104: A toxic subsidiary risk label, although not required by these Instructions, may be applied**

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 8 (E): UN packing group, regarding the article or substance for which a UN packing group number (i.e. **I**, **II** or **III**) is assigned**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft			
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package		
1	2	3	4	5	6	7	8	9	10	11	12	13		
Carbamate pesticide, liquid, toxic*	2992	6.1		Toxic		A3	I	E5	652	1 L	658	30 L		
									654	5 L			662	60 L
									Y641	1 L				
						A4	III	E1	655	60 L	663	220 L		
									Y642	2 L				

➤ **Reminder: depending of the properties of DG**

- ➔ **P.G. I** **Substances presenting a high degree of danger**
- ➔ **P.G. II** **Substances presenting a medium degree of danger**
- ➔ **P.G. III** **Substances presenting a low degree of danger**

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 9 (F): Excepted quantities** – providing an alphanumeric code which indicates the maximum quantity per inner and outer packaging for transporting dangerous goods as excepted quantities

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Carbamate pesticide, liquid, toxic*	2992	6.1		Toxic		A3	I	E5	652	1 L	658	30 L
								E4	654	5 L		
							III	E1	Y641	1 L	663	220 L
								Y642	655	60 L		
								Y642	2 L			

- Code are named from **E0 to E5**
- They provide **allowable quantities** to be carried (**maximum net quantity per inner packaging and per outer packaging**)
- This part will be fully developed further in Part 3

DANGEROUS GOODS LIST – TABLE 3-1

➤ **Column 9 (F): Excepted quantities** – providing an alphanumeric code which indicates the maximum quantity per inner and outer packaging for transporting dangerous goods as excepted quantities

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Carbamate pesticide, liquid, toxic*	2992	6.1		Toxic		A3 A4	I II III	E5	652	1 L	658	30 L
								E4	654	5 L	662	60 L
								E1	Y641 655	1 L 60 L	663	220 L
									Y642	2 L		

➤ **Table 3-3 shows maximum allowances for excepted quantities**

Code	Max. Qty per inner package	Max. Qty per outer package
E0	Not permitted as Excepted Quantities	
E1	30g/30ml	1kg/1L
E2	30g/30ml	500g/500ml
E3	30g/30ml	300g/300ml
E4	1g/1ml	500g/500ml
E5	1g/1ml	300g/300ml

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 10 (G & I): Passenger aircraft - Packing instruction**
- **Column 11 (H & J): Passenger aircraft – Max. net quantity per package**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Celluloid, in blocks, rods, rolls, sheets, tubes, etc. (except scrap)	2000	4.1		Solid flammable		A3 A48	III	E1	456	25 kg	456	100 kg

- **Column 10** refers to the relevant packing instructions listed in Part 4 for transport of the article or substance on a **passenger** aircraft
- **Column 11** shows the **maximum net quantity** (mass or volume) of the article or substance allowed **in each package** for transport on a **passenger** aircraft

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 10 (G & I): Passenger aircraft - Packing instruction**
- **Column 11 (H & J): Passenger aircraft – Max. net quantity per package**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Hydrochloric acid	1789	8		Corrosive		A3	II	E2	851	1 L	855	30 L
									Y840	0.5 L		
							III	E1	852	5 L	856	60 L
Y841	1 L											

- For some entries, a letter **“Y”** is preceding the packing instruction reference
- Such packing instructions are for **“limited quantities”** of dangerous goods (to be developed further in Part 3), associated to a maximum net quantity per package

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 10 (G & I): Passenger aircraft - Packing instruction**
- **Column 11 (H & J): Passenger aircraft – Max. net quantity per package**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Aerosols, flammable, containing substances in Division 6.1, Packing Group III and substances in Class 8, Packing Group III	1950	2.1	6.1 8	Gas flammable & Toxic & Corrosive		A145 A167		E0	203 Y203	75 kg 30 kg G	203	150 kg

- **Limited quantities state may indicate a letter "G" (Gross mass)**
- **In this case, the mass limitation of the package will be the total mass of the package**

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 10 (G & I): Passenger aircraft - Packing instruction**
- **Column 11 (H & J): Passenger aircraft – Max. net quantity per package**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Methyl fluoride	2454	2.1		Gas flammable	AU 1 CA 7	A1		E0	FORBIDDEN		200	150 kg

- **These two columns may also indicate that the transportation is forbidden on passenger aircrafts (SP A1 could be applied as an Approval)**

Biological substance, Category B	3373	6.2		None	GB 5			E0	See 650		See 650	
Biomedical waste, n.o.s.	3291	6.2		Infectious		A117	II	E0	622	No limit	622	No limit

- **For some entries, net quantity per package may refer only to a packing instruction, or may be unlimited**

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 12 (K): Cargo aircraft - Packing instruction**
- **Column 13 (L): Cargo aircraft - Maximum net quantity per package**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Celluloid, in blocks, rods, rolls, sheets, tubes, etc. (except scrap)	2000	4.1		Solid flammable		A3 A48	III	E1	456	25 kg	456	100 kg

- **Column 12** refers to the relevant packing instructions listed in Part 4 for transport of the article or substance on a **cargo aircraft**
- **Column 13** shows the **maximum net quantity** (mass or volume) of the article or substance allowed **in each package** for transport on a **cargo aircraft**

DANGEROUS GOODS LIST – TABLE 3-1

- **Column 12 (K): Cargo aircraft - Packing instruction**
- **Column 13 (L): Cargo aircraft - Maximum net quantity per package**

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Sulphuric acid, fuming †	1831	8	6.1		AU 1 CA 7 IR 3 NL 1 US 3	A2			FORBIDDEN		FORBIDDEN	

- **These two columns may also indicate that the transportation is forbidden on cargo aircrafts (SP A2 could be applied as an Approval)**

Batteries, wet, filled with acid, electric storage †	2794	8		Corrosive		A51 A164 A183		E0	870	30 kg	870	No limit
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- **For some entries, net quantity per package may be unlimited**

DANGEROUS GOODS LIST – TABLE 3-1

- Divided in 14 Columns, from "A" to "N"
- Same data in a different order, + Column "ERG" (Emergency Response Guidance – Drill Code)

UN/ ID no.	Proper Shipping Name/Description	Class or Div. (Sub Risk)	Hazard Label(s)	PG	Passenger and Cargo Aircraft				Cargo Aircraft Only		S.P. see 4.4	ERG Code	
					EQ see 2.6	Ltd Qty		Pkg Inst	Max Net Qty/Pkg	Pkg Inst			Max Net Qty/Pkg
						Pkg Inst	Max Net Qty/Pkg						
A	B	C	D	E	F	G	H	I	J	K	L	M	N
1544	Alkaloid salts, solid, n.o.s. ★	6.1	Toxic	I II III	E5 E4 E1	Forbidden Y644 Y645	1 kg 10 kg	666 669 670	5 kg 25 kg 100 kg	673 676 677	50 kg 100 kg 200 kg	A3 A5 A6 A801	6L 6L 6L

Reminder: "ERG" data are found in the ICAO Doc 9481 AN/928 – Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods

End of DG List



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Your safety is our mission.

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Safe Transport of Dangerous Goods by Air

Part 3 – Limited & Excepted quantities



Doc 9284

Technical Instructions for the Safe
Transport of Dangerous Goods by Air

2019-2020 Edition

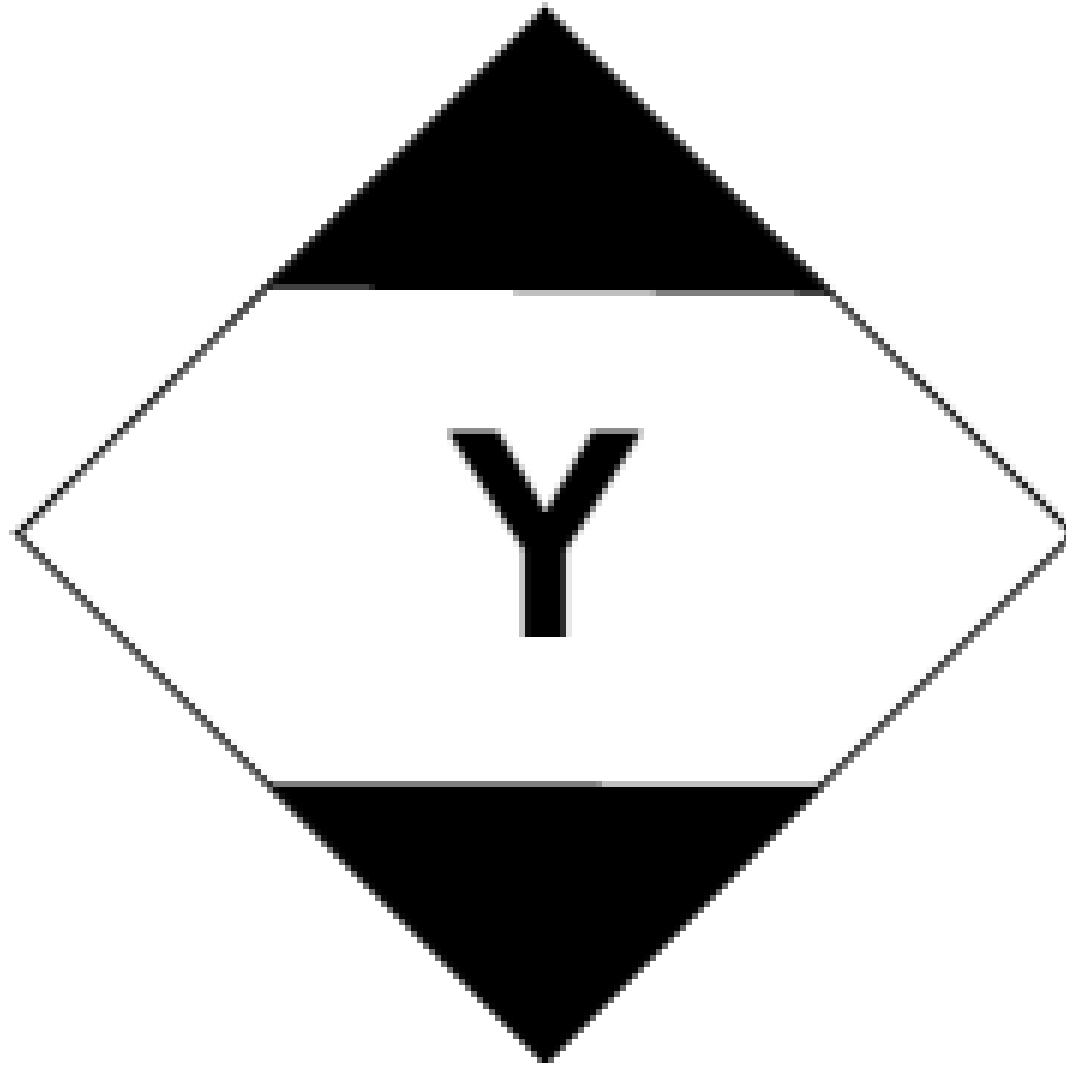


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DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

- Principally for **economical reason**, when packed in **small quantities**, some DG may be transported in **limited quantities**



DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

- Principally for economical reason, when packed in small quantities, some DG may be transported in limited quantities
- UN recognize that many dangerous goods, when in reasonably limited quantities, **present a reduced hazard** during transport and can **safely** be carried in good quality packagings, even if they have **not been tested** and marked accordingly to Part 6 of the TI (Packaging Nomenclature, Marking, Requirements and Tests)
- Packages transported in accordance with these Instructions require a **special marking** (a diamond shaped mark including a Y inside), **hazard labels**, and inner package and per-package quantities are generally lower than those authorized by the UN Model Regulations
- Only dangerous goods **which are permitted on passenger** aircraft and which meet the criteria of the following classes, divisions and packing groups (if appropriate) **may be carried** under these provisions for dangerous goods in **limited quantities**



DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

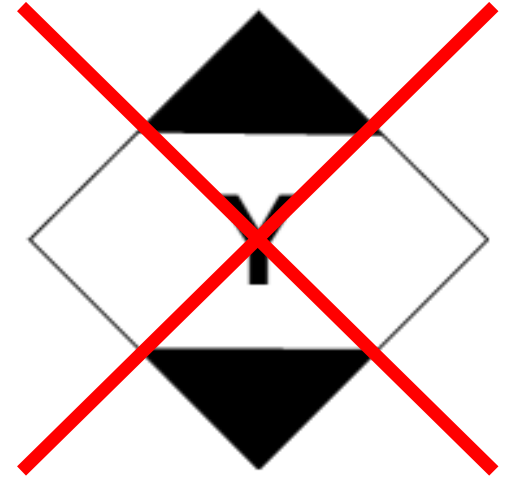
➤ Those who are **permitted** are :

- ✓ **Class 2: Only UN 1950 in Divisions 2.1 and 2.2, UN 2037 in Divisions 2.1 and 2.2 without a subsidiary risk, UN 3478 (Fuel cell cartridges, containing liquefied flammable gas) and UN 3479 (Fuel cell cartridges, containing hydrogen in metal hydride)**
- ✓ **Class 3: Packing Groups II and III and UN 3473 (Fuel cell cartridges, containing flammable liquids)**
- ✓ **Division 4.1: Packing Groups II and III but excluding all self-reactive substances irrespective of packing group**
- ✓ **Division 4.3: Packing Groups II and III, solids only and UN 3476 (Fuel cell cartridges, containing water-reactive substances)**
- ✓ **Division 5.1: Packing Groups II and III**
- ✓ **Division 5.2: Only when contained in a chemical kit or a first-aid kit**
- ✓ **Division 6.1: Packing Groups II and III**
- ✓ **Class 8: Packing Groups II and III and UN 3477 (Fuel cell cartridges, containing corrosive substances) but excluding UN 2794, UN 2795, UN 2803, UN 2809, UN 3028 and UN 3506**
- ✓ **Class 9: Only UN 1941, UN 1990, UN 2071, UN 3077, UN 3082, UN 3316, UN 3334 , UN 3335 and ID 8000**

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ On the contrary, many articles or substances, including the following, are **NOT permitted** under these limited quantity provisions :

- ✓ those permitted only on cargo aircraft
- ✓ those in Packing Group I
- ✓ those in Class 1 or 7, or Divisions 2.1 (except as permitted in the previous slide), 2.3 or 6.2
- ✓ those in Division 4.2 or with a subsidiary risk 4.2



➤ The limitations and provisions for the transport of dangerous goods in limited quantities **apply equally** to **both passenger and cargo aircraft**

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ The net quantity per package must not exceed the quantity specified in column 11 (H) of Table 3-1 (Table 4;2) against the packing instruction number identified by the prefix letter "Y" in column 10 (G)

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Pesticide, liquid, toxic, n.o.s.*	2902	6.1		Toxic		A3	I	E5	652	1 L	658	30 L
						A4	II	E4	654	5 L	662	60 L
							III	E1	655	60 L	663	220 L
									Y641	1 L		
								Y642	2 L			

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Metal salts of organic compounds, flammable, n.o.s.*	3181	4.1		Solid flammable		A3	II	E2	445	15 kg	448	50 kg
							III	E1	446	25 kg	449	100 kg
									Y441	5 kg		
									Y443	10 kg		

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

- The net quantity per package must not exceed the quantity specified in column 11 (H) of Table 3-1 (Table 4;2) against the packing instruction number identified by the prefix letter “Y” in column 10 (G)
- The gross mass per package must not exceed 30 kg

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Aviation regulated liquid, n.o.s.*	3334	9		Miscellaneous		A27	III	E1	964	450 L	964	450 L
									Y964	30 kg G	←	←
Aviation regulated solid, n.o.s.*	3335	9		Miscellaneous		A27	III	E1	956	400 kg	956	400 kg
									Y956	30 kg G	←	←

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ Quantity limitations particularities for limited quantities DG :

→ When **different DG** are contained together in **one** outer packaging, the quantities of such dangerous goods **must be so limited** that:

✓ for **Classes other than Classes 2** (except UN 2037, UN 3478 and UN 3479) and **Class 9**, the total net quantity in the package does not exceed the value of **1**, where “**Q**” is calculated using the formula :

$$Q = n1/M1 + n2/M2 + n3/M3 + \dots \quad (\rightarrow Q < 1)$$

– where **n1, n2, n3**, etc..., are the **net quantities** of the different dangerous goods

– and **M1, M2, M3**, etc..., are the **maximum net quantities** for these different dangerous goods shown in Table 3-1 against the relevant “**Y**” packing instructions

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ Quantity limitations particularities for limited quantities DG :

→ When **different DG** are contained together in **one** outer packaging, the quantities of such dangerous goods **must be so limited** that:

✓ for **Classes 2** (except UN 2037, UN 3478 and UN 3479) and **Class 9** :

– when packed together without goods of other classes, the gross mass of the package does not exceed 30 kg

or

– when packed together with goods of other classes, the gross mass of the package does not exceed 30 kg, and the total net quantity in the package of goods other than in Classes 2 (except UN 2037, UN 3478 and UN 3479) or Class 9 does not exceed the Q value of 1

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ Quantity limitations particularities for limited quantities DG :

→ When **different DG** are contained together in **one** outer packaging, the quantities of such dangerous goods **must be so limited** that:

✓ **Carbon Dioxide, solid (dry ice), UN 1845**

– may be **packed together with goods of other classes**, provided that the **gross mass of the package does not exceed 30 kg**

– the **quantity of dry ice does not need to be taken into account** in the calculation of the **“Q”** value

– however, the packaging containing the carbon dioxide, solid (dry ice) and the outer packaging **must permit the release** of carbon dioxide gas

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ Quantity limitations particularities for limited quantities DG :

→ On the **contrary**, where the different dangerous goods packed together in the outer packaging consist only of those with the **same UN number**, packing group and physical state (i.e. solid or liquid) :

✓ The **Q** calculation does **not need to be made**

✓ However, the total net quantity in the package must not exceed the maximum net quantity according to Table 3-1.

DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ Particularities for limited quantities DG : (continuous)

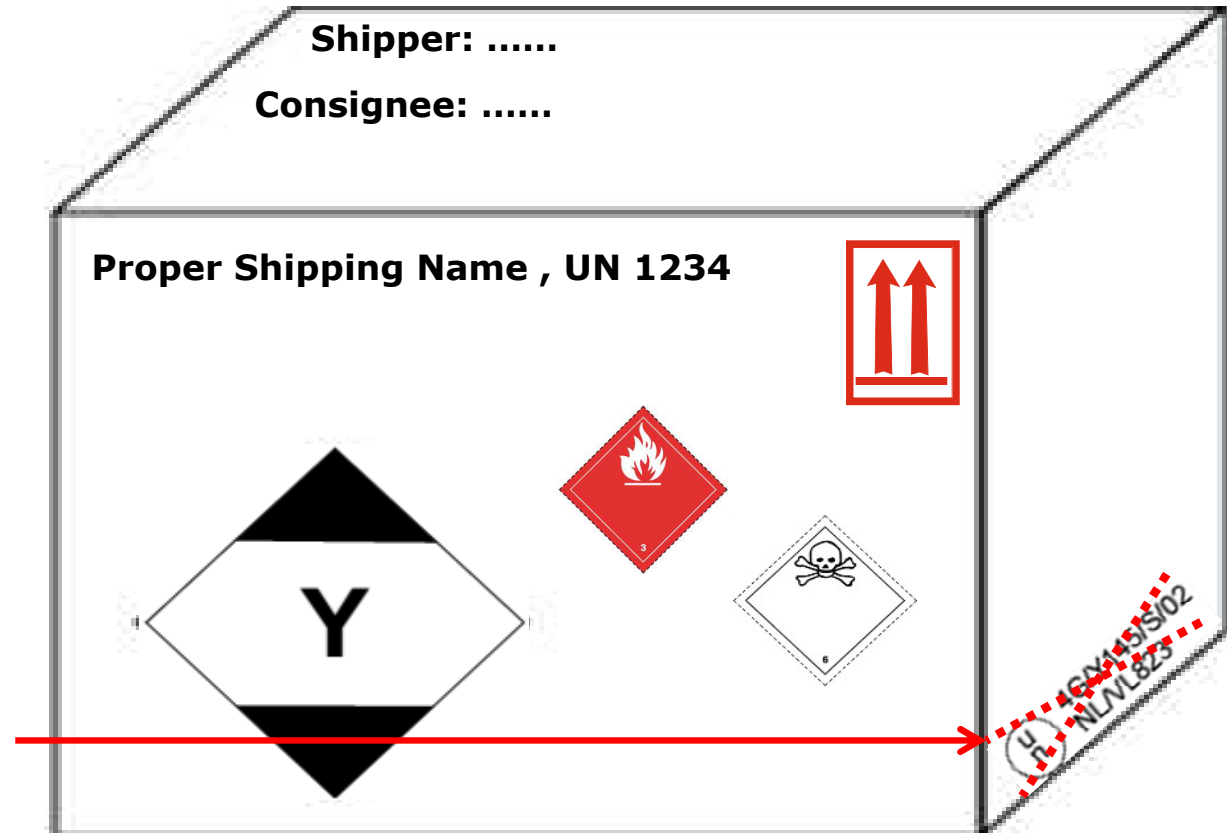
→ **Single** packaging are **not permitted**

→ Package test requirements are lower than those required in Part 6 (e.g. drop test 1.2 m, stacking test for a duration of 24 hours equivalent to the total weight of identical packages stacked to a height of 3 m)

→ In addition to the a diamond shaped mark including a Y inside, **packages must be marked as required by Part 5;2, except UN marking :**

✓ Proper Shipping Name, UN Number, Shipper & Consignee identification,

✓ UN Marking is not mandatory



DANGEROUS GOODS LIST – LIMITED QUANTITIES – CHAPTER 4

➤ Particularities for limited quantities DG : (continuous)

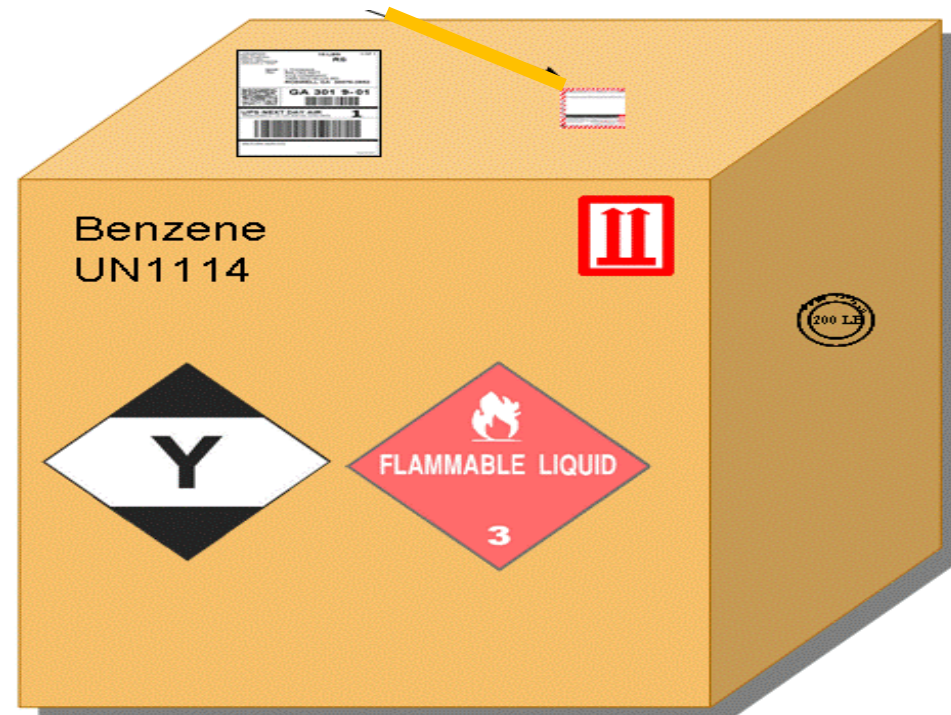
→ **Single** packaging are **not permitted**

→ Package test requirements are lower than those required in Part 6 (e.g. drop test 1.2 m, stacking test for a duration of 24 hours equivalent to the total weight of identical packages stacked to a height of 3 m)

→ In addition to the a diamond shaped mark including a Y inside, packages must be marked as required by Part 5;2, except UN marking :

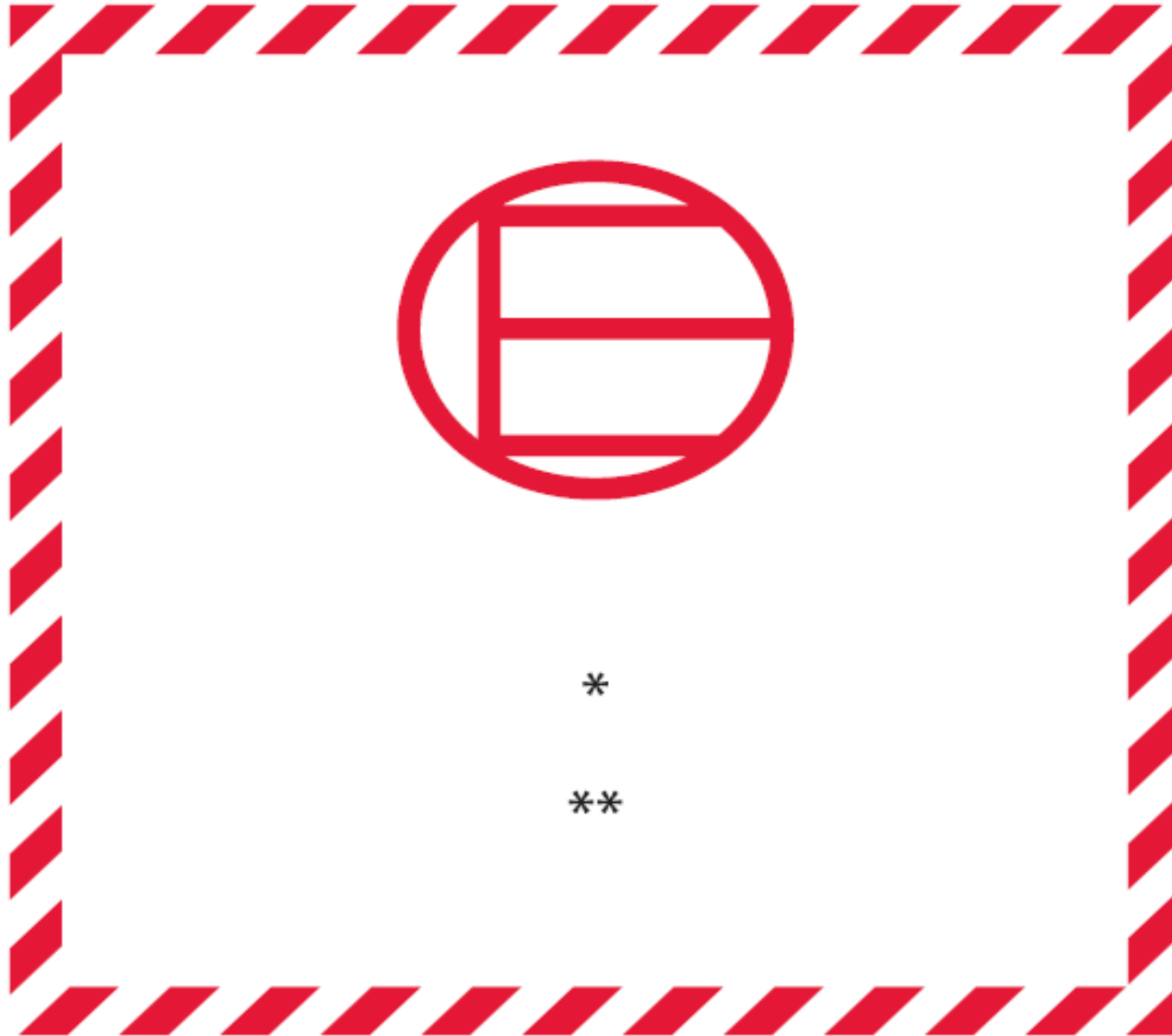
→ Packages **must be labelled** as required by Part 5;3

→ **DG transport documents must comply** with Part 5;4



DANGEROUS GOODS LIST – EXECPTED QUANTITIES – CHAPTER 5

➤ To allow transportation of **very little samples or specimen**, some provisions are defined as follow:



DANGEROUS GOODS LIST – EXCEPTED QUANTITIES – CHAPTER 5

➤ To allow transportation of very little samples or specimen, some provisions are defined as follow:

→ **Excepted quantities** of dangerous goods of certain classes, other than articles, meeting the provisions of Part 3 chapter 5 **are not subject** to any other provisions of these Instructions **except for**:

- ✓ the **prohibition in post** (Part 1, Chapter 2.3)
- ✓ the **definitions** (Part 1, Chapter 3)
- ✓ the **training requirements** (Part 1, Chapter 4)
- ✓ the **classification procedures** and **packing group criteria** (Part 2)
- ✓ the **packaging requirements** (Only certain chapter of Part 4)
- ✓ the **loading restriction** (Part 7, Chapter 2.1)
- ✓ the **reporting requirements** of accidents, incidents and other occurrences (Part 7, Chapter 4.4 & 4.5)
- ✓ the **prohibition** of dangerous goods **in baggage** (Part 8, Chapter 1.1)

Note.— In the case of radioactive material, the requirements for radioactive material in excepted packages in Part 1, chapter 6.1.5 apply

DANGEROUS GOODS LIST – EXECPTED QUANTITIES – CHAPTER 5

➤ To allow transportation of very little samples or specimen, some provisions are defined as follow:

→ DG must be carried out in accordance with **column 9** (F) of the DG List

→ and in relation with the alphanumeric code shown in **Table 3-3** (Sec. 2;6)

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Carbamate pesticide, liquid, toxic*	2992	6.1		Toxic		A3 A4	I II III	E5	652	1 L	658	30 L
								E4	654	5 L	662	60 L
								E1	Y641	1 L		
									655	60 L	663	220 L
								Y642	2 L			

Code	Max. Qty per inner package	Max. Qty per outer package
E0	Not permitted as Excepted Quantities	
E1	30g/30ml	1kg/1L
E2	30g/30ml	500g/500ml
E3	30g/30ml	300g/300ml
E4	1g/1ml	500g/500ml
E5	1g/1ml	300g/300ml

DANGEROUS GOODS LIST – EXCEPTED QUANTITIES – CHAPTER 5

➤ To allow transportation of very little samples or specimen, some provisions are defined as follow:

→ When DG for which **different codes** are packed together in excepted quantities, the **more restrictive one must be used** regarding the maximum quantities to be packed

→ Packaging must be **in compliance** with **provisions** described in **chapter 5.2** (inner packagings constructed of plastic, each one must be securely packed in an intermediate packaging with cushioning and absorbent material, this one must be securely packed in a strong, rigid outer packaging(wooden, fiberboard or other equally strong material)

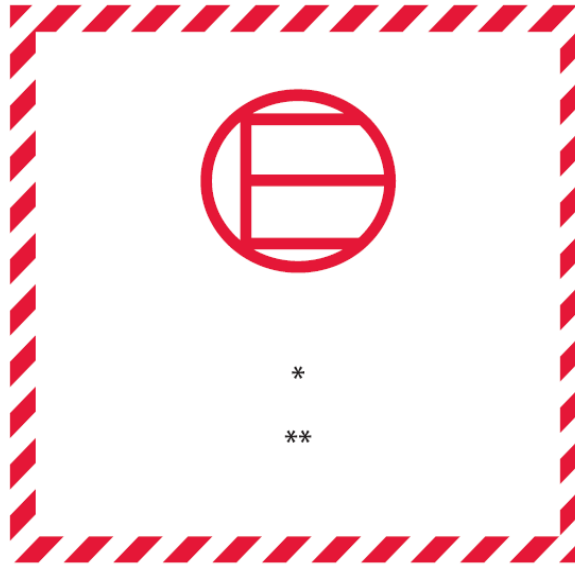
→ Packages have to comply with **reduced test** (drop test 1.80 m, stacking test 24h/3m) as described in chapter 5.3

→ Specifications regarding **documentation** are also **reduced**, **shipper's declaration and NOTOC are not required**, only a **statement** "Dangerous Goods in Excepted Quantities" and the indication of the number of packages have to be included in the **Air Waybill**

DANGEROUS GOODS LIST – EXCEPTED QUANTITIES – CHAPTER 5

➤ To allow transportation of very little samples or specimen, some provisions are defined as follow:

→ Packages must be **durably and legibly marked**



→ The **primary hazard class** or, when assigned, the **division** of each of the dangerous goods contained in the package **must be shown in the mark**

→ Where the name of the shipper or consignee is not shown elsewhere on the package, this information must be included within the mark

DANGEROUS GOODS LIST – EXCEPTED QUANTITIES – CHAPTER 5

➤ To allow transportation of very little samples or specimen, some provisions are defined as follow:

→ “De Minimis” Quantities:

➤ DG, for which codes **E1, E2, E4 and E5** are assigned, **are not subject to the Instructions when:**

✓ the maximum net quantity of material per inner packaging is limited to 1 mL for liquids and gases and 1 g for solids

✓ the provisions regarding the packaging are in compliance of the excepted package ones (except for the intermediate packaging)

✓ the provisions regarding test requirements are complied with

✓ the maximum net quantity of dangerous goods per outer packaging does not exceed 100 g for solids or 100 mL for liquids and gases.

Thank you for your attention



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