

Small load of Dangerous Goods by Road SOP

Based on ADR Rules

SMSA EXPRESS

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ADR SMALL LOADS EXEMPTION DG GUIDANCE SECTION

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Dangerous Goods small loads by road exemption guidance section

The ADR Regulations allow the transport of Dangerous Goods in small quantities that permit exemptions from the requirements from the ADR Regulations.

1) EXEMPTIONS

Requirements that still apply when availing of a small load exemption (for full details refer to ADR 1.1.3.6.2):

- Transport document must be carried in the vehicle (indicating the total quantity for each transport category);
- Vehicle must be equipped with a suitable 2 kg fire extinguisher;
- Driver and crew must have received appropriate general training, no ADR certification required;
- No orange warning plates required;
- Driver and crew must not open dangerous goods packages;
- There must be no smoking during handling in or around the vehicle;
- Packaging, marking and labelling requirements apply;
- Any torch carried must be non-sparking.

For application of the exemptions it can be established by consulting Table A in Chapter 3.2 of the ADR (the transport category is provided in Column 15). In order to use Table A, the UN number/class/packing group of the substance must be identified. Such information may be obtained from Safety Data Sheets, which should be provided with all hazardous chemicals (Section 13 of a standard SDS provides information in relation to the transport of hazardous chemicals).

How do I know if I can transport goods as per the small load exemption?

Transport Categories — Small Load Thresholds are used to determine the amount of dangerous goods that can be carried under small quantity load relaxations to the regulations before the full ADR requirements apply. See 1.1.3.6 of ADR and Table A column 15 for the transport category for each substance or article.

Once you have the transport category, look at the total maximum quantity permitted per vehicle.

2) SMALL LOAD THRESHOLDS

Substance Transport Category	Total Quantity Per Vehicle (kg or liters)
TC 0 — Extremely Dangerous	0
TC 1 — Very Dangerous	20
TC 2 — Medium Danger	333
TC 3 — Low Danger	1000
TC 4 — Very low Danger	Unlimited

The kilogram or liter threshold relate to:

- for liquids, the nominal value of the substance in liters
- for Compressed Gasses, water capacity of the cylinder in liters
- for Solids, Liquefied Gasses, Refrigerated Liquefied Gasses and Dissolved Gasses, the net mass in kilograms
- for Articles of Class 1 (Explosive), the net mass in kilograms of the explosive substance.

Where the dangerous goods carried in the transport unit belong to the same category, the maximum total quantity per transport unit is indicated in column (3) of the table below.

Transport category (1)	Substances or articles packing group or classification code/group or UN No. (2)	Maximum total quantity per transport unit (3)
0	<p>Class 1: 1.1A/1.1L/1.2L/1.3L and UN No. 0190</p> <p>Class 3: UN No. 3343</p> <p>Class 4.2: Substances belonging to packing group I</p> <p>Class 4.3: UN Nos. 1183, 1242, 1295, 1340, 1390, 1403, 1928, 2813, 2965, 2968, 2988, 3129, 3130, 3131, 3134, 3148, 3396, 3398 and 3399</p> <p>Class 5.1: UN No. 2426</p> <p>Class 6.1: UN Nos. 1051, 1600, 1613, 1614, 2312, 3250 and 3294</p> <p>Class 6.2: UN Nos. 2814 and 2900</p> <p>Class 7: UN Nos. 2912 to 2919, 2977, 2978 and 3321 to 3333 Class 8: UN No. 2215 (MALEIC ANHYDRIDE, MOLTEN)</p> <p>Class 9: UN Nos. 2315, 3151, 3152 and 3432 and articles containing such substances or mixtures</p> <p>and empty uncleared packagings, except those classified under UN No. 2908, having contained substances classified in this transport category.</p>	0
1	<p>Substances and articles belonging to packing group I and not classified in transport category 0</p> <p>and substances and articles of the following classes:</p> <p>Class 1: 1.1B to 1.1J a /1.2B to 1.2J/1.3C/1.3G/1.3H/1.3J/1.5D a</p> <p>Class 2: groups T, TC a, TO, TF, TOC a and TFC</p> <p>aerosols: groups C, CO, FC, T, TF, TC, TO, TFC and TOC chemicals under pressure: UN Nos. 3502, 3503, 3504 and 3505</p> <p>Class 4.1: UN Nos. 3221 to 3224, 3231 to 3240, 3533 and 3534</p> <p>Class 5.2: UN Nos. 3101 to 3104 and 3111 to 3120</p>	20

2	<p>Substances belonging to packing group II and not classified in transport categories 0, 1 or 4</p> <p>and substances and articles of the following classes: Class 1: 1.4B to 1.4G and 1.6N</p> <p>Class 2: group F</p> <p>aerosols: group F</p> <p>chemicals under pressure: UN No. 3501 Class 4.1: UN Nos. 3225 to 3230, 3531 and 3532</p> <p>Class 4.3: UN Nos. 3292</p> <p>Class 5.1: UN Nos. 3356</p> <p>Class 5.2: UN Nos. 3105 to 3110</p> <p>Class 6.1: UN Nos. 1700, 2016 and 2017</p> <p>and substances belonging to packing group III Class 9: UN No. 3090, 3091, 3245, 3480 and 3481</p>	333
3	<p>Substances belonging to packing group III and not classified in transport categories 0, 2 or 4</p> <p>and substances and articles of the following classes:</p> <p>Class 2: groups A and O</p> <p>aerosols: groups A and O</p> <p>chemicals under pressure: UN No. 3500 Class 3: UN No. 3473</p> <p>Class 4.3: UN No. 3476</p> <p>Class 8: UN Nos. 2794, 2795, 2800, 3028, 3477 and 3506</p> <p>Class 9: UN Nos. 2990 and 3072</p>	1 000
4	<p>Class 1: 1.4S</p> <p>Class 4.1: UN Nos. 1331, 1345, 1944, 1945, 2254 and 2623</p> <p>Class 4.2: UN Nos. 1361 and 1362 packing group III Class 7: UN Nos. 2908 to 2911</p>	unlimited

	Class 9: UN Nos. 3268, 3499, 3508 and 3509 and empty, uncleaned packagings having contained dangerous goods, except for those classified in transport category 0	
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For UN Nos. 0081, 0082, 0084, 0241, 0331, 0332, 0482, 1005 and 1017, the total maximum quantity per transport unit shall be 50 kg.

In the above table, "maximum total quantity per transport unit" means:

- For articles, gross mass in kilograms (for articles of Class 1, net mass in kilograms of the explosive substance; for dangerous goods in machinery and equipment specified in the Annex, the total quantity of dangerous goods contained therein in kilograms or liters as appropriate);
- For solids, liquefied gases, refrigerated liquefied gases and dissolved gases, net mass in kilograms;
- For liquids, the total quantity of dangerous goods contained in liters;
- For compressed gases, adsorbed gases and chemicals under pressure, the water capacity of the receptacle in liters.

For mixed loads you will need to calculate using the multipliers, as shown below. From 1 July 2019, this calculation is shown on transport documents.

3) SMALL QUANTITY MIXED LOAD THRESHOLDS		
Substance/article Transport Category	Multiplier	Total
TC 1	Quantity x 50	X
TC 2	Quantity x 3	Y
TC 3	Quantity x 1	Z
		= (Maximum, 1000 units per vehicle)

For loads comprising different Transport Categories, apply the multiplier above. If the sum of x, y, and z exceeds 1000 units (kg/liters) then the load falls into the full ADR load provisions.

4) MIXED LOADING PROHIBITION

Packages bearing different danger labels shall not be loaded together in the same vehicle or container unless mixed loading is permitted according to the following Table based on the danger labels they bear.

NOTE 1: In accordance with 5.4.1.4.2, separate transport documents shall be drawn up for consignments that cannot be loaded together in the same vehicle or container.

Labels Nos.	1	1.4	1.5	1.6	2.1, 2.2, 2.3	3	4.1	4.1 + 1	4.2	4.3	5.1	5.2	5.2 + 1	6.1	6.2	7 A, B, C	8	9
1																		b
1.4					a	a	a		a	a	a	a		a	a	a	a	a b c
1.5																		b
1.6																		b
2.1, 2.2, 2.3		a				X	X	X		X	X	X	X		X	X	X	X
3		a				X	X	X		X	X	X	X		X	X	X	X
4.1		a				X	X	X		X	X	X	X		X	X	X	X
4.1 + 1								X										
4.2		a				X	X	X		X	X	X	X		X	X	X	X
4.3		a				X	X	X		X	X	X	X		X	X	X	X
5.1	d	a				X	X	X		X	X	X	X		X	X	X	X
5.2		a				X	X	X		X	X	X	X	X	X	X	X	X
5.2 + 1														X	X			
6.1		a				X	X	X		X	X	X	X		X	X	X	X
6.2		a				X	X	X		X	X	X	X		X	X	X	X
7A, B, C		a				X	X	X		X	X	X	X		X	X	X	X
8		a				X	X	X		X	X	X	X		X	X	X	X
9	b	a b c	b	b	X	X	X		X	X	X	X		X	X	X	X	X

X Mixed loading permitted.

a Mixed loading permitted with 1.4S substances and articles.

b Mixed loading permitted between goods of Class 1 and life-saving appliances of Class 9 (UN Nos. 2990, 3072 and 3268).

c Mixed loading permitted between safety devices, pyrotechnic of Division 1.4, compatibility group G, (UN No. 0503) and safety devices, electrically initiated of Class 9 (UN No. 3268).

d Mixed loading permitted between blasting explosives (except UN No. 0083 explosive, blasting, type C) and ammonium nitrate (UN Nos. 1942 and 2067), ammonium nitrate emulsion or suspension or gel (UN No. 3375) and alkali metal nitrates and alkaline earth metal nitrates provided the aggregate is treated as blasting explosives under Class 1 for the purposes of placarding, segregation, stowage and maximum permissible load. 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).

5) PRECAUTIONS WITH RESPECT TO FOODSTUFFS, OTHER ARTICLES OF CONSUMPTION AND ANIMAL FEEDS

If special provision CV28 is indicated for a substance or article in Column (18) of Table A of Chapter 3.2, precautions with respect to foodstuffs, other articles of consumption and animal feeds shall be taken as follows:

Packages as well as uncleared empty packagings, including large packagings and intermediate bulk, containers (IBCs), bearing labels conforming to Class 6.1 or 6.2 and those bearing labels, conforming to Class 9 containing goods of UN Nos. 2212, 2315, 2590, 3151, 3152 or 3245, shall not be stacked on or loaded in immediate proximity to packages known to contain foodstuffs, other articles of consumption or animal feeds in vehicles, in containers and at places of loading, unloading or transshipment.

When these packages, bearing the said labels, are loaded in immediate proximity of packages known to contain foodstuffs, other articles of consumption or animal feeds, they shall be kept apart from the latter:

- (a) By complete partitions which should be as high as the packages (use of other general cargo packages is acceptable) bearing the said labels;
- (b) By packages not bearing labels conforming to Class 6.1, 6.2 or 9 or packages bearing labels conforming to Class 9 but not containing goods of UN Nos. 2212, 2315, 2590, 3151, 3152 or 3245; or
- (c) By a space of at least 0.8 m;

unless the packages bearing the said labels are provided with an additional packaging or are d (e.g. by a sheeting, a fibreboard cover or other measures).

6) LIMITED QUANTITIES (LQ)(ADR 3.4)

Limited quantity exemptions are applicable to the carriage of dangerous goods of certain classes packed in specified small packaged quantities (e.g. 5 kg or 5 liters maximum per inner package). Each inner package must be placed in suitable outer packaging with a gross mass limit of 30 kg (inner packages and outer packaging total weight not to exceed 30 kg). Shrink-wrapped trays may also be used as outer packaging, with a package limit of 20 kg.

When the provisions of this exemption are met, although the dangerous goods are contained in individual small packages and grouped in units up to 30 kg, **there is no limit to the total quantity per shipment** that may be carried in this way.

The **packaging specified does not need to be UN approved**, but must be suitable and of good quality.

The applicable quantity limit for the inner packaging or article is specified for each substance in ADR Chapter 3.2., Table A, Column (7a). The quantity "0" has been indicated in this column for each entry **not permitted** to be carried in accordance with these provisions.

Packages containing dangerous goods in limited quantities must bear the marking in Figure 1 for the indicated

modes of transport (mark must be 100mm x 100mm, diamond outline of at least 2mm). When transporting goods in accordance with air requirements, the air mark is applied. This mark is accepted for the other modes of transport:

Figure 1
Road/Rail/Sea mark

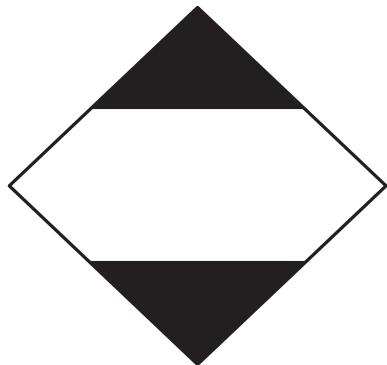
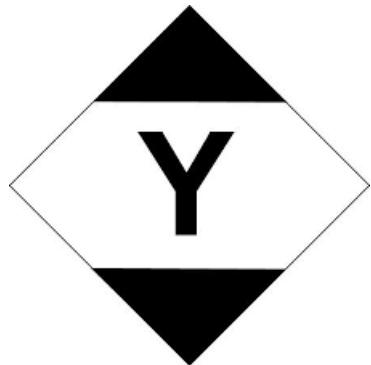


Figure 2
Air



Once packaged and labelled for carriage in accordance with all limited quantity provisions the **main exemptions are:**

- No orange plates required on vehicles;
- No vehicle marking for consignments under 8 tons (over 8 tons vehicle must be marked with the same mark as for packages front and rear of vehicle)
- Drivers are not required to hold an ADR driver training certificate;
- No other hazard labels or UN number marking;
- No vehicle safety equipment or PPE;
- No fire extinguishers;
- No instructions in writing;

- No transport documents (except for sea shipment where a container packing certificate is required). Some provisions do still apply, such as the **relevant provisions** concerning orientation marks, use of over-packs and vehicle/container packing certificates. Such provisions are set out in ADR 3.4.

Note also that for shipments involving sea or air transport some of the above exemptions do not apply. For example, a dangerous goods note (transport document) is still necessary for LQ shipments by sea, and will be required for any transport operation that includes a sea transport.

7) VEHICLE MARKING CARRYING LIMITED QUANTITY PACKAGES

Transport units over 12 tons (gross vehicle mass), carrying more than 8 tons of limited quantity packages must display the mark indicated in Figure 1 (or Figure 2) in the form of a placard (large label or placard dimensions should be 250mm x 250mm). In advance of carriage, consignors of dangerous goods packed in limited quantities must inform SMSA in writing or electronic means of the total gross mass of such goods to be consigned.

If the vehicle requires the ADR blank orange plate marking because of other dangerous goods being carried that are not in LQ limits or out of the exempted quantities, then the LQ placards are not required.

8) EXCEPTED QUANTITIES (ADR 3.5)

The excepted quantities exemption is similar to the limited quantity exemption, but is only for certain dangerous goods in very small quantities. Once you have complied with the basic training requirements, classification procedures and packaging, labelling and quantity limitations, no other provisions apply to the transport of dangerous goods in excepted quantities. ADR specifies an "E code" for all dangerous goods in Chapter 3.2, Table A, Column 7(b), which specifies the excepted quantities for outer and inner packaging, indicated in Table 1.

Table 1

Code	Maximum net quantity per inner packaging (in grams for solids and ml for liquids and gases)	Maximum net quantity per outer packaging (in grams for solids and ml for liquids and gases, or sum of grams and ml in the case of mixed packing)
E0	Not permitted as Excepted Quantity	
E1	30	1000
E2	30	500
E3	30	300
E4	1	500
E5	1	300

Packages must consist of an inner packaging placed in an intermediate packaging, securely packed with cushioning and then placed in a suitable rigid strong outer packaging.

Figure 3 indicates the marking of packages containing excepted quantities, the mark being a minimum 100mm x 100mm.

Figure 3
Excepted quantity marking



For further advice you should consult the Company DG Specialist.

CHECKLIST

To be completed by the DG specialist at the station upon receipt of the booking/documentation from the consignor, before allowing transportation/loading by the drivers:

a) Is the cargo quantities exempt under ADR following the small load thresholds? Y N

- If **YES**, follow the exempt rules
- If **NO**, follow the full ADR compliance requirements

b) Is the cargo LQ or EQ?

- If **YES**, follow the LQ or EQ exemption rules
- If **NO**, follow the full ADR compliance requirements

c) For small exempt loads, have number 1 above been applied?

d) For small exempt mixed loads have number 3 above been applied?

e) For small exempt mixed loads, is the calculation on the documentation?

f) For small exempt loads, does it add up to or below 1000 units kg/liters?

g) Check segregation no. 4 is met

h) Check that no. 5 foodstuff segregation requirements are met

If any of the first 2 (a or b) answers is N = No, in the right column then the full ADR rules must be applied. If N= No (right column) for any of C to F above then the load/s must be withheld until the corrective measures have been applied.

Once all actions above have been met the loads may be transported and the drivers may proceed.

A copy of the checklist must be retained by the DG station specialist and filed.

Checked by: _____

Date: _____