



# Consigning and transporting dangerous goods packed in limited quantities

Guidance for users



### Document control

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### Important

The information contained in this guideline is intended to be general in nature and is not a substitute for specific technical or legal advice. Readers should check their specific circumstances against the requirements of the ADG Code as they relate to the dangerous goods to be transported. The information in this guideline is applicable to the transport of dangerous goods by road and rail only. Other requirements will apply to the transport of dangerous goods by sea or air, and users should refer to the relevant competent authorities.

This guideline deals only with the provisions of the ADG Code as they relate to the transport of dangerous goods by road or rail. Other laws relating to these activities will impose other duties or obligations not dealt with in this guideline.

The NTC would like to thank the Competent Authorities Panel and the many organisations and individuals who contributed to the development of this guidance document.

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### 1 Purpose of this guideline

The purpose of this guideline is to assist duty holders and enforcement agencies in interpreting and applying the requirements of the Australian Code for the Transport of Dangerous Goods, Chapter 3.4 – Dangerous Goods Packed in Limited Quantities.

**Section 4 of this guideline contains a quick reference that provides an overview of the requirements. This section is structured in the form of FAQs with links to the relevant sections of the guideline where more detailed information can be found.**

### 2 Scope of the guideline

This guideline applies to dangerous goods packed in limited quantities. Sections 8 and 9 also apply to domestic consumable dangerous goods that are packed and intended for retail distribution.

The legislation defines dangerous goods as being ***packed in limited quantities*** if:

- (a) The goods are packed in accordance with Chapter 3.4 of the ADG Code; and
- (b) The quantity of dangerous goods in each inner packaging or in each article does not exceed the quantity specified in, or referred to, in column 7a of the Dangerous Goods List for those goods.

**Domestic consumable dangerous goods** are defined as:

- party poppers; sparklers and bon-bons (UN 0337)
- domestic smoke detectors (UN 2911)
- lighters and lighter refills (UN 1057)
- portable fire extinguishers with compressed or liquefied gas up to 23 kg gross weight (UN 1044).

### 3 Introduction

The term ‘dangerous goods packed in limited quantities’, generally referred to as LQ, refers to small containers (generally the type seen in retail stores) that have been packed in a box or shrink wrapped tray. The term ‘limited quantity’ is unrelated to the aggregate quantity of dangerous goods in the consignment or the vehicle load.

Chapter 3.4 of the Australian Code for the Transport of Dangerous Goods by Road or Rail (ADG Code) specifies the requirements that must be met for the LQ concessions to apply. These requirements relate to:

- maximum size of inner packagings (containers)
- packaging requirements
  - general requirements
  - the manner in which the dangerous goods are to be packed
  - gross weight of the packed cartons or shrink-wrapped tray
  - segregation
- marking and labelling
- information and documentation.

Other matters in the ADG Code, such as vehicle placarding, continue to apply.

The rationale behind the limited quantity provisions is that selected (lower risk) dangerous goods in small containers and packed in good quality, robust outer packaging pose a lower

risk in transport than the same goods packed in larger volumes. The stringent quantity and packaging provisions are designed to ensure that any potential release in transport would be minimal. Based on this, LQ dangerous goods can be transported with less stringent requirements than those that apply to fully regulated dangerous goods.

**Domestic consumable dangerous goods** receive concessions relating to transport documentation and placarding thresholds only. They do not receive concessions relating to packaging or marking and labelling. Domestic consumable dangerous goods must be packed, marked and labelled as per fully regulated transport.

**Note:** Before deciding to take advantage of the concessions in Chapter 3.4, you should determine if they are appropriate for your business. In some instances, for example, manufacturing or distribution businesses that regularly consign large loads of both fully regulated dangerous goods and LQ dangerous goods may find that any benefits gained are outweighed by the time and resources required to comply with two different sets of requirements. For these businesses, it may be simpler and more cost-effective to treat all dangerous goods as fully regulated.

### 4 Quick reference/FAQs

This section provides a summary of the requirements in the form of frequently asked questions. For more detail on these requirements, refer to the relevant section of the guideline.

**Note:** These materials are still dangerous goods and so still present a risk in transport. Although the requirements are relaxed, they must be treated with the appropriate care. You must make sure that anyone who is involved in transporting LQ is trained and instructed to ensure the transport is safe and lawful.

#### ***Q1 What can I transport under the LQ provisions? (guidance sections 4 and 5)***

Dangerous goods (DG) that are packed in inner packagings with a capacity no greater than that specified in column 7a of Table 3.2.3 in the ADG Code for the specific UN number, and that are packed into packagings that meet the LQ requirements in Chapter 3.4.

OR

Domestic consumable (DC) dangerous goods (as defined in the ADG Code) that are packed and intended for retail distribution. You must package, mark and label domestic consumable dangerous goods as fully regulated DG, but they are subject to the relaxed placarding and document requirements.

#### ***Q2 How do I package LQ for transport? (guidance section 6)***

You must package the LQ in suitably strong packagings. They must be designed, made, filled, closed and transported so there will be no accidental release of the DG. You may also need intermediate packaging. Inner packagings must be packaged in cartons or shrink wrapped on trays.

The maximum weight of each package is 30 kg, but if it is stretch/shrink wrapped on a tray or the containers may be easily broken or punctured, the maximum weight is 20 kg.

You must package any DC dangerous goods in UN approved packagings and as per the relevant packing instruction for the specific item.

#### ***Q3 How do I mark and label the LQ packages for transport? (guidance section 7)***

LQ dangerous goods must have an LQ diamond on the outer packaging. It must be at least 100 × 100 mm. In the case it won't fit on the package, it may be reduced to no more than 50 × 50 mm. For liquids, orientation arrows may also be needed.

DC dangerous goods must be marked and labelled in the same way as fully regulated DG.

#### ***Q4 What documentation do I need to provide or carry? (guidance section 8)***

You do not need paper transport documentation, but there are information requirements for the dangerous goods.

If you are the consignor, you must provide the total gross mass of the dangerous goods to be transported for each consignment. If there is an aggregate quantity (net) of more than 2,000 kg(L) of a single UN number, then you must provide details of the UN number, proper shipping name and aggregate quantity.

## Consigning and transporting dangerous goods packed in limited quantities

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If you are the prime contractor, then you need to ensure this information can be readily ascertained during transport. Drivers and loaders need this for placarding, and it may be needed for incident response or in an inspection of the vehicle.

If there is a document for the goods (like a consignment note), it must include the line 'Contains dangerous goods packed in limited quantities'.

### **Q5 How do I know if I have a placard load of DG when there is LQ on the vehicle? (guidance section 9)**

**NOTE:** LQ/DC and fully regulated DG are separately placarded, so you may need both an LQ and a regular DG placard on the vehicle.

If you have no more than 2,000 kg(L) of a single UN number, and no other DG on board, then the placard load limit is 8,000 kg (gross mass). Above this, you need an LQ placard on the vehicle. If there is more than 2,000 kg(L) of a single UN number, then you will need an LQ placard.

If there is fully regulated DG on the vehicle, you need to calculate if it is a placard load and apply the appropriate placard.

If you have less than a placard load of LQ/DC *and* less than a placard load of fully regulated DG, then you need to apply a mixed class placard if the combined quantity is more than a placard load. See the next section for how to calculate the combined quantity.

### **Q6 How do I calculate the combined quantity? (guidance section 9)**

**Note:** This only applies if you have less than a placard load for both LQ/DC and fully regulated DG.

#### FIRST

Determine what the placard load limit is for the fully regulated DG on the vehicle.

#### THEN

If the placard load limit for the DG is 250 kg(L), then the combined quantity is:

$$\text{Combined Qty} = \left(\frac{LQ}{10}\right) + DG \quad \text{OR} \quad \text{Combined Qty} = (LQ \times 10\%) + DG$$

If the combined quantity is **more than 250 kg(L)**, then you need to placard the vehicle with a **mixed class placard**.

#### OR

If the placard load limit for the DG is 1,000 kg(L), then the combined quantity is:

$$\text{Combined Qty} = \left(\frac{LQ}{4}\right) + DG \quad \text{OR} \quad \text{Combined Qty} = (LQ \times 25\%) + DG$$

If the combined qty is **more than 1,000 kg(L)**, then you need to placard the vehicle with a **mixed class placard**.

You need to show this calculation on the dangerous goods transport document – it can be written by hand.

## 5 Maximum size of inner packagings

Not all dangerous goods are permitted to be transported under the LQ provisions. Certain classes or divisions of materials are prohibited in their entirety, and other classes or divisions are restricted to the less severe packing groups.

The Dangerous Goods List in Chapter 3.2 of the ADG Code specifies the maximum 'Limited Quantity' per inner package for each UN number. For some substances, the quantity specified will be '0', meaning that the specific substance cannot be transported under the LQ provisions.

3.4.1 A quantity of dangerous goods is a limited quantity if:

- a) The dangerous goods has a limited quantity amount (more than 0), listed in Column 7a Limited Quantities in the Dangerous Goods List, Table 3.2.3; and
- b) The dangerous goods are packed in an inner packaging with:
  - (i) if solids, a mass that is less than or equal to the number shown in column 7a of the Dangerous Goods List, Table 3.2.3, when that number is expressed in kilograms;
  - (ii) if liquids, a volume that is less than or equal to the number shown in column 7a of the Dangerous Goods List, Table 3.2.3 when that number is expressed in litres;
  - (iii) if gases, including a gas in a liquefied form, are contained in one or more means of containment each of which has a capacity less than or equal to the number shown in column 7a of the Dangerous Goods List, Table 3.2.3, when that number is expressed in litres.

As can be seen in the following extract of the dangerous goods list, UN 1265, PG I cannot be transported as LQ, but UN 1265 PG II can be transported as LQ, provided the capacity of the inner package does not exceed 1L. For UN 1266, inner packagings for both PG II and PG III are permitted to have a capacity of up to 5L.

**Table 3.2.3: Dangerous Goods List**

UN No.	Name and Description	Class or Division	Subsidiary Hazard	Packing Group	Special Provisions	Limited Quantities	Excepted Quantities	Packagings & IBCs		Portable Tanks & Bulk Containers	
								Packing Instruction	Special Packing Provisions	Instructions	Special Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
<b>Ref</b>	<b>3.1.2</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0.1.3</b>	<b>3.3</b>	<b>3.4</b>	<b>3.5</b>	<b>4.1.4</b>	<b>4.1.4</b>	<b>4.2.5 4.3.2</b>	<b>4.2.5</b>
1265	PENTANES, liquid	3		I		0	E3	P001		T11	TP2
		3		II		1 L	E2	P001 IBC02	B8	T4	TP1



**Table 3.2.3: Dangerous Goods List**

UN No.	Name and Description	Class or Division	Subsidiary Hazard	Packing Group	Special Provisions	Limited Quantities	Excepted Quantities	Packagings & IBCs		Portable Tanks & Bulk Containers	
								Packing Instruction	Special Packing Provisions	Instructions	Special Provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
Ref	3.1.2	2.0	2.0	2.0.1.3	3.3	3.4	3.5	4.1.4	4.1.4	4.2.5 4.3.2	4.2.5
1266	PERFUMERY PRODUCTS with flammable solvents	3		II	163	5 L	E2	P001 IBC02		T4	TP1 TP8
		3		III	223 163	5 L	E1	P001 IBC03 LP01		T2	TP1

For the full table, refer to Table 3.2.3 'Dangerous Goods List' in the ADG Code.

## 6 Packaging requirements

**Note: The relaxed packaging requirements in this section do not apply to domestic consumable dangerous goods.**

The principle behind LQ is that an acceptable level of safety is assured by ensuring the inner packagings are packed in smaller quantities and in a way that minimises the risk of damage during transport. The packaging requirements relate to the packagings used and the way in which the dangerous goods are packed.

For transport, inner packagings must be packed in a carton or shrink-wrapped tray. Section 3.4.2.4 of the ADG Code specifies the maximum gross mass of the package into which the inner package is placed. This is 30 kg except for shrink wrapped trays, where the limit is 20 kg, and for inner packagings liable to break or be easily punctured, where the limit is also 20 kg.

Section 3.4.2 of the ADG Code specifies the way in which the dangerous goods must be packed, including inner packagings, intermediate packagings and outer packagings. For limited quantity exemptions to apply, the general requirements for packaging (to be of good quality and suitable, etc.) also apply, but the packaging does not have to be 'UN approved'.

**For full details on packaging requirements, refer to section 3.4.2 of the ADG Code.**

### 6.1 General packaging requirements (LQ)

3.4.2.1 General requirements applicable to all packagings used for dangerous goods packed in limited quantities.

Dangerous goods transported in accordance with this chapter must be packed in packages that meet the following criteria:

- a) packagings must be designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods; and
- b) all packagings must meet the provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8; and
- c) all packagings must meet the construction requirements of 6.1.4, 6.2.1.2 and 6.2.4; and
- d) for articles of Division 1.4, Compatibility Group S, packagings must also fully comply with the provisions of 4.1.5.

The general packaging requirements applicable to LQ relate to the quality and performance standards that packagings are required to meet. In general, all packagings (including inner packagings) must be robust enough to protect the dangerous goods from damage during transport and to prevent any leakage of the dangerous goods.

- **Outer packagings** must:
  - be strong enough to withstand the shocks and loadings normally encountered during transport and storage operations, including loading and unloading
  - be constructed and closed so as to prevent any loss of contents
  - be clean and in sound condition
  - protect the inner packages from damage
  - be constructed of material that cannot interact dangerously with or be adversely affected if the dangerous goods leak
  - comply with additional product-specific requirements that apply in some instances (refer to Chapter 3.4 of the ADG Code for full details).
- **Inner packagings** must:
  - be made of materials that won't be affected or weakened by the dangerous goods, or won't adversely react with them
  - be constructed and closed so as to prevent any loss of the dangerous goods
  - if filled with liquids:
    - have an appropriate resistance to internal pressure that might develop under normal conditions of transport
    - have sufficient ullage (airspace) to ensure there is no leakage or permanent distortion of the packaging due to an expansion of the liquid caused by temperatures likely to occur during transport.

When preparing packagings for transport, you must ensure they are constructed and closed to prevent any loss of contents that might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or increase in pressure (resulting from high temperatures, for example).

To check if the packagings you intend to use are suitable, consult your packaging supplier. Your packaging supplier should be able to advise you on the best packaging for your particular circumstances and how to correctly use the packagings. Ask your supplier for evidence of the specification/certification that the packagings are constructed from materials that are suitable for the dangerous goods and have sufficient strength for the packaging method, gross weight limits, handling during loading/unloading, forces encountered during transport and so on that they may be subjected to.

Your packaging supplier will also be able to provide advice on correct filling and closure of inner packagings.

### 6.2 How to pack LQ

3.4.2.2 Inner packagings are compulsory, except for articles such as aerosols or “receptacles, small, containing gas”.

3.4.2.3 Intermediate packagings:

- a) are compulsory for liquid goods of Class 8, packing group II which have inner packagings of glass, porcelain or stoneware. The intermediate packaging must be compatible and rigid.
- b) are compulsory for inner packagings that are liable to break or be easily punctured, such as those made of glass, porcelain, stoneware or certain plastics where the outer packaging is shrink wrapped or stretch wrapped.
- c) may be used at any other time.

3.4.2.4 Outer packagings

Limited quantities must be packed in an outer packaging which must meet the following criteria:

- a) dangerous goods packed in limited quantities amounts must be placed in a suitable outer packaging
- b) except for articles of Division 1.4, Compatibility Group S, shrink wrapped or stretch wrapped trays meeting the conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 are acceptable as outer packagings, provided the total gross mass of the package does not exceed 20kg
- c) inner packagings that are liable to break or be easily punctured must be packed in outer packagings not exceeding a total gross mass of 20kg
- d) all other outer packagings must not exceed a total gross mass of 30kg.

When preparing packages for transport, inner packages or articles must be placed into an outer packaging (carton) or packed on shrink-wrapped or stretch wrapped trays.

Both the inner packages and outer packages must meet the general requirements in 5.1 above.

Intermediate packaging is compulsory for the following:

- inner packagings made from glass, porcelain, stoneware, or plastics that are liable to break or be easily punctured, when the outer packaging is shrink wrapped or stretch wrapped

- Class 8, PGII liquids in glass, porcelain or stoneware – the intermediate packaging must be compatible and rigid.



### 3.4.2.4 Outer packagings

Limited quantities must be packed in an outer packaging which must meet the following criteria:

- a) dangerous goods packed in limited quantities amounts must be placed in a suitable outer packaging
- b) except for articles of Division 1.4, Compatibility Group S, shrink wrapped or stretch wrapped trays meeting the conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 are acceptable as outer packagings, provided the total gross mass of the package does not exceed 20kg
- c) inner packagings that are liable to break or be easily punctured must be packed in outer packagings not exceeding a total gross mass of 20kg
- d) all other outer packagings must not exceed a total gross mass of 30kg.

## 6.3 Packing requirements for domestic consumables

Concessions relating to packaging do not apply to DC. DC must be packed the same as if they were being consigned as fully regulated dangerous goods. The following table provides an example of suitable packagings for DC.

**Note:** There may be additional requirements, including licensing for UN 0337 and UN 2911 – check with the relevant authority in your state or territory.

Party poppers, sparklers, bon-bons (UN 0337)	P135
Domestic smoke detectors (UN 2911)	SP 290 ARPANSA
Lighters and lighter refills (UN 1057)	SP 201, P002 PP84 UN Approved packagings – rigid outer packagings meeting the packing group II performance level. Packagings designed and constructed and arranged to prevent movement, inadvertent ignition or inadvertent release of flammable gas or liquid
Portable fire extinguishers with compressed or liquified gas up to 23 kg gross weight (UN 1044)	SP 225, P003 PP91 Suitable outer packagings meeting general provisions. Constructed of suitable material, and of adequate strength and design for capacity. Designed and constructed to prevent inadvertent discharge

### 6.4 Segregation

- 3.4.6.1 Different dangerous goods packed in limited quantities may be placed in the same outer packaging provided they will not interact dangerously in the event of leakage.
- 3.4.6.2 Any segregation provisions elsewhere in this Code do not apply to dangerous goods packed in limited quantities within a cargo transport unit. This includes the need to segregate food and food packaging.

**Note: The concession from segregation does not apply to domestic consumable dangerous goods.**

Provided LQ dangerous goods are not packed in the same carton with other DG that they could dangerously react with, no other segregation requirements apply. The requirement to segregate DG of Class 8 or Division 2.3 or 6.1 from food and foodstuffs does not apply to LQ.

Dangerous goods packed in LQ are not required to be segregated from each other or from other dangerous goods. When LQ dangerous goods are loaded on the same vehicle as other dangerous goods, the LQ dangerous goods do not need to be considered when determining segregation.

## 7 Marking of packages

- 3.4.7.1 Except for air transport, packages containing dangerous goods in limited quantities must bear the mark shown in Figure 3.4.1

All packages containing LQ must be marked with the LQ mark (diamond). Packages bearing this mark are also acceptable for transport by sea but not by air.

The LQ diamond is generally required to be a minimum of 100 × 100 mm. However, if your package is too small to fit a 100 × 100 mm diamond, the size can be reduced but must still be at least 50 × 50 mm.

You must ensure the LQ diamond is:

- readily visible
- legible
- able to withstand exposure to open weather.

The LQ diamond on the package is a symbol that the dangerous goods have been correctly packed to meet the requirements of sections 3.4.1 and 3.4.2 of the ADG Code.

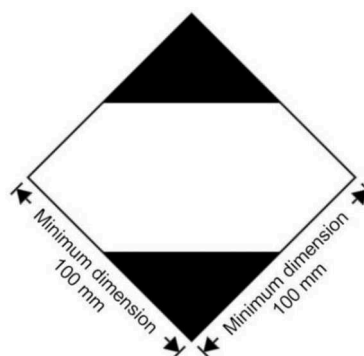
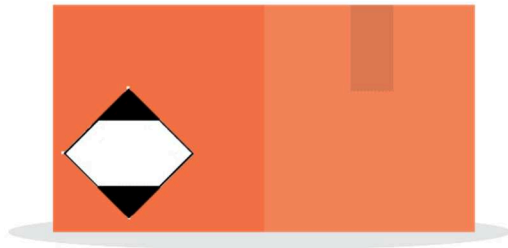


Figure 3.4.1



The following LQ diamond denotes that the dangerous goods have been packed to meet the requirements for LQ in the ICAO Technical Instructions for transport by air. The maximum capacity of inner packagings and packaging requirements for LQ in the ICAO Technical Instructions are more stringent than those for land transport.

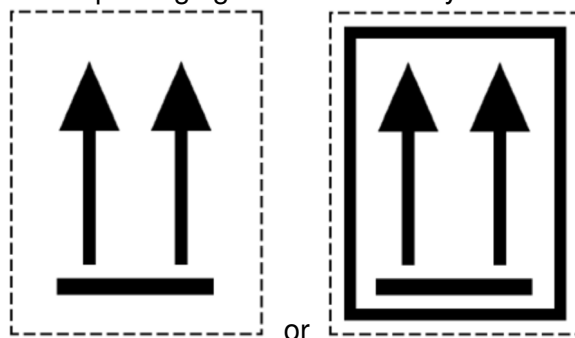
**The ICAO LQ diamond must not be placed on packages unless they meet the requirements specified in the ICAO Technical Instructions.**



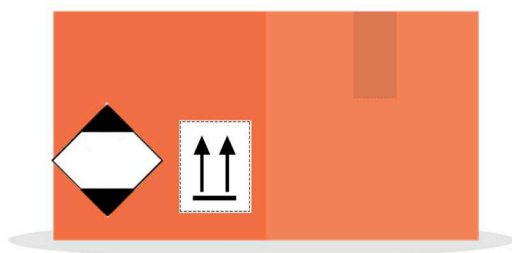
Packages that have been packed to meet the requirements for transport by air and bearing the ICAO LQ diamond are acceptable for transport as LQ by road or rail.

For cartons containing inner packagings filled with liquids, orientation arrows must be shown on two opposite sides of the outer package unless one of the following applies:

- the inner packagings each contain 120 ml or less and they are packed in the outer carton with sufficient absorbent material to completely absorb the liquid contents
- the inner packagings are leak-tight in all orientations (such as aerosols)
- the inner packagings are hermetically sealed and each contain 500 ml or less.



**Note: Concessions for marking and labelling do not apply to domestic consumable dangerous goods.**



## 8 Information and documentation

3.4.12.1 Prior to transporting, the consignor of the dangerous goods packed in limited quantities must inform the prime contractor, in a form readily ascertainable during transport, of:

- a) the total gross mass of such goods to be consigned, and, if the goods consist of multiple consignments for different consignees, the gross mass of each consignment; and
- b) if the goods to be consigned include an aggregate quantity of 2000 kg(L) or greater of any one UN Number - the UN Number, Proper Shipping Name and total aggregate quantity for that UN number.

3.4.12.2 The prime contractor must ensure that the information provided to them under 3.4.12.1 is readily ascertainable during transport of the dangerous goods.

### 8.1 Information

Information provided under section 3.4.12.1 of the ADG Code serves two primary purposes. The first is to help work out placarding requirements for the vehicle; the second is to help emergency responders understand what's in the load so they can provide an appropriate response in the event of an incident. You may also be asked to provide this information to an inspector or authorised officer.

The ADG Code doesn't require the information to be in a physical form in the vehicle, but you may find that doing so is the easiest and most efficient way to ensure the information is readily accessible at the roadside.

Whatever form is used (electronic or physical) it is important to think about how the information will remain accurate from initial pickup to final delivery, including splitting of the load and consolidation with other consignments.

#### **Providing the information electronically**

If you are a consignor, before deciding to provide the information electronically you will need to talk to your prime contractor to verify what systems are in place to ensure the information will be readily ascertainable on the side of the road. Some of the things to consider are:

- How will the driver access or call up the information (mobile phone, laptop, onboard data systems)?
- What if the driver is incapacitated?
- Will the information be accessible in areas with no mobile data coverage?

- Does the prime contractor have a 24/7 phone service that can retrieve information about the contents of the load using the vehicle registration?

### **Providing the information in physical form**

Unless both the consignor and prime contractor have the systems in place to ensure information provided electronically is accessible 24/7 from the roadside, providing the required information is probably best done using physical documents. This doesn't have to be in the form of a traditional dangerous goods transport document. It could include documents such as the transport manifest, consignment notes or dispatch documents. If the information is provided to the prime contractor electronically (for example, by email), providing the driver with a printed copy may be sufficient.

### **What information must be provided?**

If you are a consignor, you need to provide the prime contractor and driver with the total gross mass of the LQ to be picked up in the load. If the total LQ to be picked up includes an aggregate of 2,000 kg/l of any specific UN number(s), you will also need to provide the following details for each of those UN numbers:

- UN Number
- Proper Shipping Name
- Aggregate Quantity

If the load consists of multiple consignees, then an itemised list showing the breakdown of information by consignment will need to be included.

If LQ/DC dangerous goods and fully regulated dangerous goods are loaded on the same vehicle, and placarding is determined using the 'combined quantity calculation' method, you will also need to document the calculation on the dangerous goods transport document. The combined quantity calculation method is discussed further under 'Vehicle placarding' (section 9).

If you are a consignor, consider if adding an 'LQ flag' in your inventory systems (for example, to item SKU codes) could help you identify and generate the required information. Consider if including this information in consignment barcodes could enable information to be generated.

If you are a prime contractor, you must ensure the information provided to you is readily ascertainable during transport of the dangerous goods.

### **What is included in gross mass?**

Gross mass includes the total weight of the packaged carton of LQ as presented for transport. It includes the weight of the contents and any packaging. If the carton includes both LQ and other products, the entire weight should be used.



### 8.2 Documentation

3.4.13.2 Any transport document for the consignment (e.g. consignment note, bill of lading, etc.) must include the notation 'Contains Dangerous Goods Packed in Limited Quantities'.

All consignments of dangerous goods will have some form of documentation. This may be as simple as a consignment note affixed to the carton or something more traditional such as a bill of lading.

## 9 Vehicle placarding

Vehicle placarding refers to the dangerous goods diamonds displayed on the outside of a vehicle. Placards identify that the vehicle is transporting dangerous goods and give an indication of the type of goods that are on the vehicle. This information is used to assist emergency services and first responders in the event of an incident. Not all vehicles transporting dangerous goods are required to display placards. The requirement to placard the vehicle depends on the quantity and type of dangerous goods on the vehicle. The point at which the vehicle requires placarding is referred to as the 'placarding threshold'.

Dangerous goods packed in limited quantities and domestic consumable dangerous goods are considered to be of a lower risk and therefore have a higher placarding threshold. If LQ and/or DC dangerous goods are loaded with other, fully regulated dangerous goods on the same vehicle, the risk is increased, and the vehicle may require additional placards or the placard threshold may be lower.

Vehicle placarding thresholds represent the point at which the risk of the overall load is such that additional controls are considered necessary, including placing placards on the vehicle to identify that it is carrying dangerous goods over a specified quantity.

**Note: Placarded vehicles are not permitted to travel through tunnels unless expressly permitted.**

### 9.1 When do I need to placard my vehicle?

Placard thresholds are contained in Table 5.3 of the ADG Code. Table 5.3 is divided into Table 5.3.1, which contains the thresholds for fully regulated DG, and Table 5.3.2, which contains the thresholds specific to LQ/DC DG.

If the vehicle is loaded with both fully regulated DG and LQ/DC DG, then the load must be assessed against both Table 5.3.1 **and** Table 5.3.2.

There are several layers to the placarding thresholds. These are aimed at ensuring the threshold of 8 tonnes gross mass is only applicable when the load does not contain any of the following:

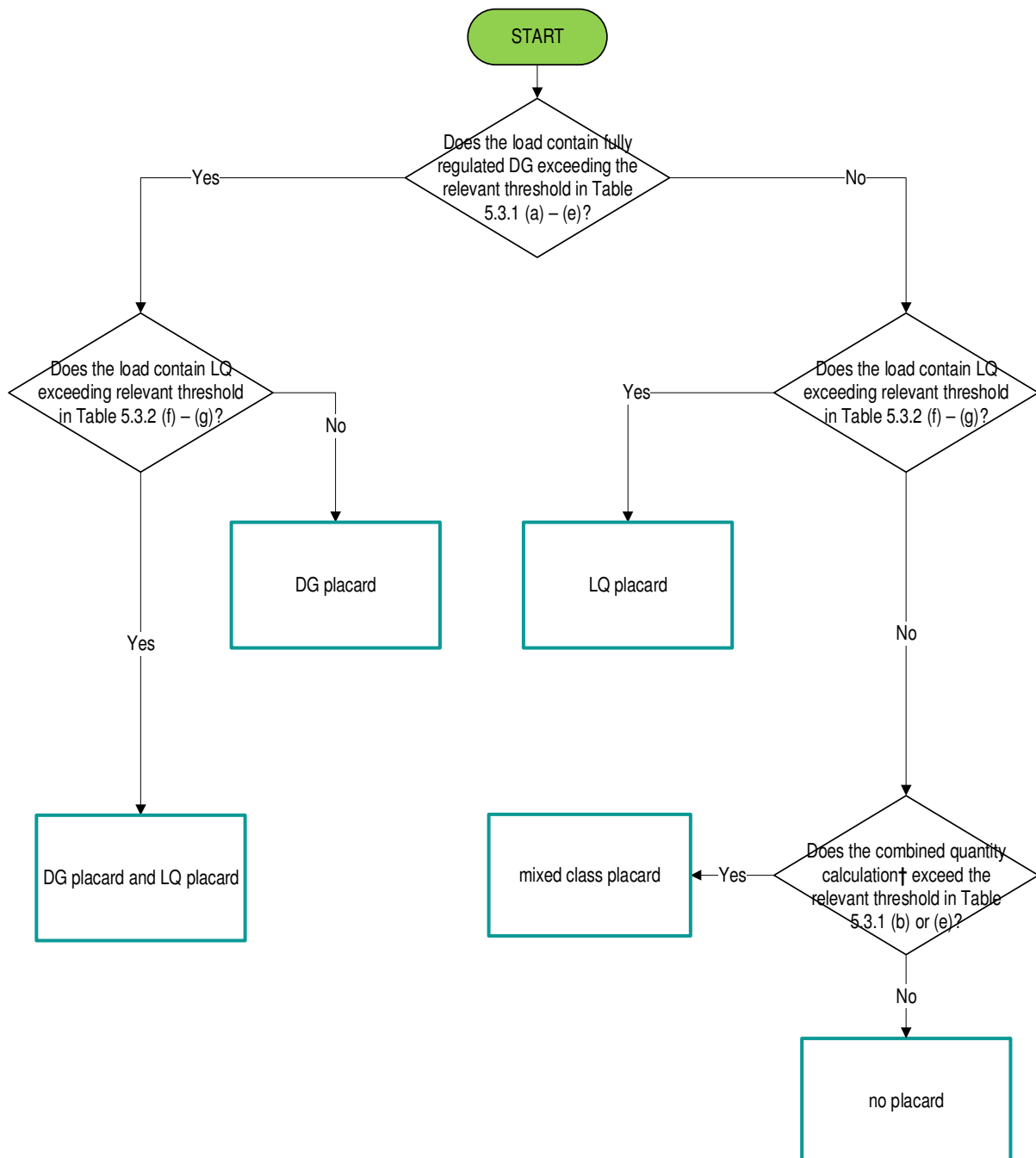
- LQ/DC of more than 2,000 kg/l of any one UN number from a single place of consignment
- fully regulated DG in quantities below a placard load.

Where a load contains both fully regulated DG and LQ/DC, the following placarding rules apply:

- (a) If the quantity of fully regulated DG in the load exceeds the relevant threshold, standard placarding is required; and
- (b) If the quantity of LQ/DC in the load exceeds the relevant placarding threshold, the vehicle must be placarded with an LQ placard
- (c) If the load contains fully regulated DG and LQ/DC and is not required to be placarded under (a) and/or (b), the combined quantity is calculated using a combination of the aggregate quantity of the fully regulated DG and 10% or 25% of the gross weight of the LQ/DC, depending on the fully regulated DG in the load. The resulting figure is then assessed against the placarding threshold applicable to the fully regulated DG in the load.

These rules are shown in the decision flow on the next page.

**Placarding decision flow chart**



**† Calculating the combined quantity:**

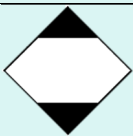
- (i) If the relevant threshold for the dangerous goods in Table 5.3.1 is (b):  
the combined quantity = the aggregate quantity of the regulated DG + 10% of the Gross weight of the LQ/DC; or
- (ii) If the relevant threshold for the dangerous goods in Table 5.3.1 is (e):  
the combined quantity= the aggregate quantity of the regulated DG + 25% of the Gross weight of the LQ/DC

### 9.1.1 LQ/DC dangerous goods only loads

Table 5.3.2 contains two placard thresholds for LQ/DC dangerous goods. These thresholds recognise that a large quantity of a single product – for example, methylated spirits – all packed together represents a greater risk than the same quantity spread over many consignments, all packed separately.

<b>Table 5.3.2 – Dangerous goods transported under Chapter 3.4</b>		
<b>Dangerous goods packed in limited quantities and/or domestic consumable dangerous goods.</b> Note: these placarding thresholds are separate to and in addition to the above placarding thresholds. In practice, this may mean a single vehicle is required to be placarded with both a placard for the fully regulated DG in the load and an LQ placard.		
<b>(f)</b>	Limited quantities dangerous goods and/or domestic consumable dangerous goods (defined in 1.2.1)	The load includes limited quantities dangerous goods and/or domestic consumable dangerous goods that includes an aggregate quantity of any one UN number from a single place of consignment of $\geq 2,000$ kg(L)
<b>(g)</b>	Loads where (f) does not apply Limited quantities dangerous goods and/or domestic consumable dangerous goods (defined in 1.2.1)	The gross mass of the limited quantities dangerous goods and/or domestic consumable dangerous goods is $> 8$ tonnes (see Note 5)

The following examples demonstrate the application of Table 5.3.2 when the only dangerous goods on the vehicle are LQ/DC.

<b>Example 1: Single pickup</b>		
<b>Vehicle DG load</b>		
LQ = 3,500 kg gross – includes 2,100 l/kg aggregate quantity of UN 1950		
<b>Assessment against Table 5.3.2:</b> Applicable threshold = (f) based on aggregate quantity of UN 1950		
<b>Actual?</b>	<b>Threshold?</b>	<b>Placard required?</b>
3,500 kg gross (includes 2,100 of UN 1950)	2,000 l/kg (agg qty)	Yes
		
<b>Placards required?</b> Yes, placard with LQ diamond		

**Example 2: Consolidated load, multiple consignors**

LQ = 4,000 kg gross – multiple consignments from several consignors (largest single pickup = 1,000 kg gross)

**Assessment against Table 5.3.2:** Applicable threshold = (g)

Actual?	Threshold?	Placard required?
4,000 kg gross	8 tonne gross	No

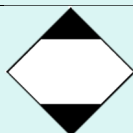
**Placards required?** No

**Example 3: Consolidated load, multiple consignors**

LQ = 8,200 kg gross – multiple consignments from several consignors (largest single pickup = 1,000 kg gross)

**Assessment against Table 5.3.2:** Applicable threshold = (g)

Actual?	Threshold?	Placard required?
8,200 kg gross	8 tonne gross	Yes



**Placards required?** Yes, placard with LQ diamond

**9.1.2 Mixed loads – LQ/DC and fully regulated dangerous goods**

The placard thresholds and rules recognise that LQ/DC dangerous goods loaded on the same vehicle as fully regulated dangerous goods represents a greater risk than when the only dangerous goods on the vehicle are LQ/DC. To address this, the placarding thresholds use an escalating set of rules to ensure that the 8 tonne gross mass placarding threshold applies only to the lowest risk loads.

When assessing your load against placarding thresholds, you will need to assess any fully regulated dangerous goods in the load against the relevant threshold in Table 5.3.1 **and** assess the LQ/DC in the load against the relevant threshold in Table 5.3.2. If the thresholds in Table 5.3.1 or 5.3.2 are exceeded, the vehicle must be placarded accordingly. This may mean the vehicle requires placarding with both a placard for the fully regulated dangerous goods and an LQ placard.

The following examples demonstrate the application of Table 5.3 when the vehicle is loaded with both fully regulated dangerous goods and LQ/DC.

**Example 4: Mixed load fully regulated DG and LQ**

**Vehicle DG load**

Regulated DG = 1,500 kg/l, does not include any 2.1 (other than aerosols), 2.3, PG I, placardable units or 6.2 LQ = 4,000 kg gross – multiple consignments from several consignors (largest single pickup = 1,000 kg gross)

**Assessment**

**Step 1: Assess regulated DG against Table 5.3.1:** Applicable threshold = (e)

Actual?	Threshold?	Placard required?
1,500 l/kg (agg qty)	1,000 l/kg (agg qty)	Yes

**Step 2: Assess LQ against Table 5.3.2 -** Applicable threshold = (g)

Actual?	Threshold?	Placard required?
4,000 kg gross	8 tonne gross	No

**Placards required?** Yes, placard with Class diamond relative to fully regulated DG (e.g. Class 8)



**Example 5: Mixed load fully regulated DG and LQ**

**Vehicle DG load**

Regulated DG = 800 kg/l, does not include any 2.1 (other than aerosols), 2.3, PG I, placardable units or 6.2 LQ = 8,200 kg gross – multiple consignments from several consignors (largest single pickup = 1,500 kg gross)

**Assessment**

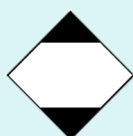
**Step 1: Assess regulated DG against Table 5.3.1:** Applicable threshold = (e)

Actual?	Threshold?	Placard required?
800 l/kg (agg qty)	1000 l/kg (agg qty)	No

**Step 2: Assess LQ against Table 5.3.2:** Applicable threshold = (g)

Actual?	Threshold?	Placard required?
8,200 kg gross	8 tonne gross	Yes

**Placards required?** Yes, placard with LQ diamond



**Example 6: Mixed load fully regulated DG and LQ**

**Vehicle DG load**

Regulated DG = 1,200 kg/l, does not include any 2.1 (other than aerosols), 2.3, PG I, placardable units or 6.2

LQ = 3,000 kg gross – includes 2,200 l/kg aggregate quantity of UN 1299

**Assessment**

**Step 1: Assess regulated DG against Table 5.3.1:** Applicable threshold = (e)

Actual?	Threshold?	Placard required?
1,200 l/kg (agg qty)	1,000 l/kg (agg qty)	Yes

**Step 2: Assess LQ against Table 5.3.2:** Applicable threshold = (f)

Actual?	Threshold?	Placard required?
3,000 kg gross (included 2,200 l UN 1299)	2,000 l/kg (agg qty)	Yes

**Placards required?** Yes, placard with Class diamond relative to fully regulated DG (e.g. Class 3) **and** LQ diamond



*Combined quantity calculation*

In some instances, you may have a load that contains both fully regulated dangerous goods and LQ/DC but neither exceed the relevant placarding thresholds in Tables 5.3.1 or 5.3.2. The placarding thresholds and rules recognise that such loads may also present a level of risk that warrants placarding.

**Table 5.3: Notes**

NOTE 5: When transporting a load that contains dangerous goods specified in (b) or (e) of Table 5.3.1 and dangerous goods specified in (g) of Table 5.3.2, each of which are below a placard load, the combined quantity of dangerous goods in the load must be calculated and the result assessed against the relevant threshold in Table 5.3.1.

Calculation of combined quantity

- (i) If the relevant threshold for the dangerous goods in Table 5.3.1 is (b) – the combined quantity = the aggregate qty regulated DG + 10% of the gross weight of the LQ/DC; or
- (ii) If the relevant threshold for the dangerous goods in Table 5.3.1 is (e) – the combined quantity = the aggregate qty regulated DG + 25% of the gross weight of the LQ/DC

Calculation of the combined quantity of the load is based on a sliding scale of risk – the more fully regulated DG in the load, the less LQ/DC permitted before placarding required, the less fully regulated DG in the load, the more LQ/DC permitted. The figures of 10% and 25% were determined based on the relevant placard thresholds in Table 5.3.1 (b) (250 kg/l) and Table 5.3.1 (e) (1,000 kg/l) and the perceived risk.

If placarding is required under the combined quantity calculation, the vehicle must be placarded using the Mixed Class diamond and the calculation shown on the DG Transport Document.

A ready reckoner for calculating the combined quantity is contained in Appendix 1 of this guidance document.

**The following examples demonstrate the application of Table 5.3 when the vehicle is loaded with both fully regulated dangerous goods and LQ/DC.**

### Example 7: Mixed load regulated DG and LQ

#### Vehicle DG load

Regulated DG = 900 l/kg – does not include any 2.1 (other than aerosols), 2.3, PG I, placardable units or 6.2

LQ = 2,500 kg gross – does not include  $\geq 2,000$  agg qty of a single UN number from a single place of consignment

#### Assessment

**Step 1: Assess regulated DG against Table 5.3.1:** Applicable threshold = (e)

Actual?	Threshold?	Placard required?
900 l/kg (agg qty)	1,000 l/kg (agg qty)	No

**Step 2: Assess LQ against Table 5.3.2:** Applicable threshold = (g)

Actual?	Threshold?	Placard required?
2,500 kg gross	8 tonne gross	No

**Step 3: Calculate combined quantity:** Required as no placards are required under 1 or 2 – applicable Table 5.3.1 threshold =  $\geq 1,000$  therefore, the applicable LQ percentage = 25%.

**Combined quantity = 900 (DG) + (2500  $\times$  25%) = 900 + 625 = 1,525**

Combined quantity	Threshold?	Placard required?
1,525	$\geq 1,000$	Yes



**Placards required?** Yes, Mixed Class label



**Example 8: Mixed load regulated DG and LQ**

**Vehicle DG load**

Regulated DG = 500 l/kg – does not include any 2.1 (other than aerosols), 2.3, PG 1, placardable units or 6.2

LQ = 1,000 kg gross

**Assessment**

**Step 1: Assess regulated DG against Table 5.3.1:** Applicable threshold = (e)

Actual?	Threshold?	Placard required?
500 l/kg (agg qty)	1,000 l/kg (agg qty)	No

**Step 2: Assess LQ against Table 5.3.2:** Applicable threshold = (g)

Actual?	Threshold?	Placard required?
1,000 kg gross	8 tonne gross	No

**Step 3: Calculate combined quantity:** Required as no placards are required under 1 or 2 – applicable Table 5.3.1 threshold =  $\geq 1000$ . Therefore, the applicable LQ percentage = 25%.

**Combined quantity = 500 (DG) + (1,000 x 25%) = 500 + 250 = 750**

Combined quantity	Threshold?	Placard required?
750	$\geq 1,000$	No

**Placards required? No**

## Consigning and transporting dangerous goods packed in limited quantities

Use this table if the load contains any fully regulated DG of Div 2.1 (other than aerosols), Div 2.3 or PG I

**Table 5.3.1 (b) – 250 kg/l**

LQ gross (kg)	LQ x 10%	Allowable regulated DG
100	10	240
200	20	230
300	30	220
400	40	210
500	50	200
600	60	190
700	70	180
800	80	170
900	90	160
1000	100	150
1100	110	140
1200	120	130
1300	130	120
1400	140	110
1500	150	100
1600	160	90
1700	170	80
1800	180	70
1900	190	60
2000	200	50
2100	210	40
2200	220	30
2300	230	20
2400	240	10
2500	250	0

Use this table if the load **does not** contain any fully regulated DG of Div 2.1 (other than aerosols), Div 2.3 or PG I

**Table 5.3.1 (e) – 1000 kg/l**

LQ gross (kg)	LQ x 25%	Allowable regulated DG
100	25	975
200	50	950
300	75	925
400	100	900
500	125	875
600	150	850
700	175	825
800	200	800
900	225	775
1000	250	750
1100	275	725
1200	300	700
1300	325	675
1400	350	650
1500	375	625
1600	400	600
1700	425	575
1800	450	550
1900	475	525
2000	500	500
2100	525	475
2200	550	450
2300	575	425
2400	600	400
2500	625	375
2600	650	350
2700	675	325
2800	700	300
2900	725	275
3000	750	250
3100	775	225
3200	800	200
3300	825	175
3400	850	150
3500	875	125
3600	900	100
3700	925	75
3800	950	50
3900	975	25
4000	1000	0



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