

# DANGEROUS GOODS READY RECKONER

## Rules for Determining the Placarding Requirements for Aerosols and Cryogenic Fluids in Accordance with the NOHSC National Standard for the Storage and Handling of Workplace Dangerous Goods

### Background

Schedule 1 of the *National Standard for the Storage and Handling of Workplace Dangerous Goods* specifies quantities of dangerous goods, which trigger certain placard and manifest requirements. Item 1 of Schedule 1 specifies the placard and manifest quantities for Class 2.1, 2.2 and 2.3 dangerous goods, Aerosols and Cryogenic Fluids. Although Item 1 of Schedule 1 specifies aggregate levels for Aerosols and Cryogenic Fluids, it does not include specific levels for Class 2.1, 2.2 or 2.3 Aerosols or Cryogenic Fluids. As a result of this anomaly in Schedule 1, further guidance is necessary for circumstances where Aerosols and Cryogenic Fluids are stored and handled.

This set of rules has been developed to clarify the application of Schedule 1 where Aerosols and Cryogenic Fluids are stored and handled.

Aerosols and Cryogenic Fluids should be identified by Class, that is Class 2.1, 2.2 or 2.3. In effect, Item 1 in Schedule 1 of the National Standard should be read as having the following entires:

Item	Dangerous Goods and Combustible Liquids	Packing Group	Placarding Quantity	Manifest Quantity
1.	Class 2			
	Class 2.1	Not Applicable	500 L	5,000 L
	Class 2.2 – Subsidiary Risk 5.1	Not Applicable	2,000 L	10,000 L
	Class 2.2 – Other	Not Applicable	5,000 L	10,000 L
	Class 2.3	Not Applicable	50 L	500 L
	Aerosol Class 2.1	Not Applicable	5,000	10,000 L
	Aerosol Class 2.2	Not Applicable	5,000	10,000 L
	Aerosol Class 2.3	Not Applicable	5,000	10,000 L
	Cryogenic Fluid Class 2.1	Not Applicable	1,000 L	10,000 L
	Cryogenic Fluid Class 2.2	Not Applicable	1,000 L	10,000 L
	Cryogenic Fluid Class 2.3	Not Applicable	1,000 L	10,000 L

The different classes of aerosols and cryogenic fluids should be treated as discrete classes of dangerous goods. Quantities of different classes of Aerosols or Cryogenic Fluids are not aggregated when comparing the quantity in a storage area or premises to the quantities in Item 1. Quantities are still aggregated when comparing the quantity of Mixed Classes in a storage area or premises to a quantity specified in Item 4.

This approach results in the following rules to determine the placarding requirements for Aerosols and/or Cryogenic Fluids stored and handled with or without other dangerous goods.

### Rule 1 – Storage Areas containing only Aerosols

Where the quantity of one Class of Aerosol stored and handled in a storage area exceeds the Placarding Quantity for Aerosols shown in Item 1 of Schedule 1, that is, 5000 L, a Class 2.1, 2.2 or 2.3 label would need to be displayed.

Where the quantity of two or more Classes of Aerosols stored and handled in a storage area exceeds 5000 L, Class 2.1, 2.2 and/or 2.3 labels must be displayed for that storage area for each Class of Aerosol that exceeds 50% of the Placarding Quantity for Aerosols shown in Item 1 of Schedule 1, that is, 5000 L.

Where the quantity of three Classes of Aerosols stored and handled in a storage area exceeds 5000 L, but the quantity of each Class is less than 50% of the Placarding Quantity shown in Item 1 of Schedule 1, that is, 5000 L, a Mixed Class label must be displayed.

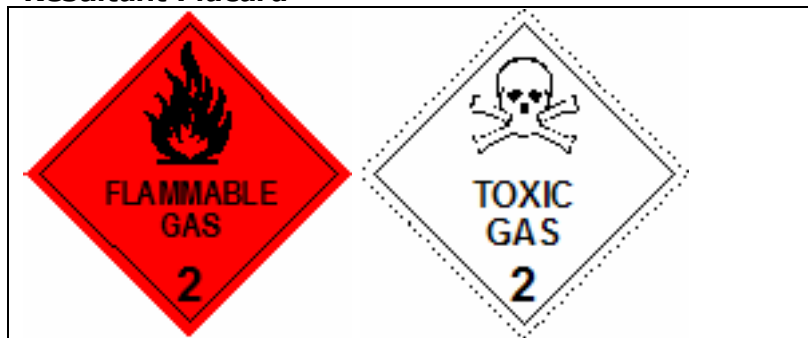
**Example 1 – Storage Area which contains Aerosols only**

DG	Class/type	Sub-risk	PG	Quantity (kg or L)
Aerosol 1	Aerosol Class 2.1	-	-	2,600
Aerosol 2	Aerosol Class 2.2	-	-	900
Aerosol 3	Aerosol Class 2.3	-	-	2,600
Total				6,100

The placard displayed for this storage area would have a Class 2.1 label and a Class 2.3 label because the total quantity is greater than 5000 L and the Class 2.1 and 2.3 Aerosols are over 50 % of the quantity specified for Aerosols in Item 1 of Schedule 1 (5000 L).

Total in storage area > 5,000 (Item 4b)
Aerosol 1 (Class 2.1) > 50% of 5,000 [Class 2.1 Label required]
Aerosol 2 (Class 2.2) < 50% of 5,000
Aerosol 3 (Class 2.3) > 50% of 5,000 [Class 2.3 Label required]

**Resultant Placard**



**Rule 2 – Storage Areas containing only Cryogenic Fluids**

Where the quantity of one Class of Cryogenic Fluid stored and handled in a storage area exceeds the Placarding Quantity for Cryogenic Fluids shown in Item 1 of Schedule 1, that is, 1000 L, a Class 2.1, 2.2 or 2.3 label must be displayed.

Where the quantity of two or more Classes of Cryogenic Fluids stored and handled in a storage area exceeds 2000 L, Class 2.1, 2.2 and/or 2.3 labels must be displayed for that storage area for each Class of Cryogenic Fluid that exceeds 50% of the Placarding Quantity specified in Item 1 of Schedule 1, that is, 1000 L. This approach applies the Mixed Class rule in accordance with Item 4a of Schedule 1.

In cases where the aggregate quantity is greater than 1000 L but less than 2000 L and each class of Cryogenic Fluid is present in a quantity less than 1000 L, a Mixed Class label must be displayed.

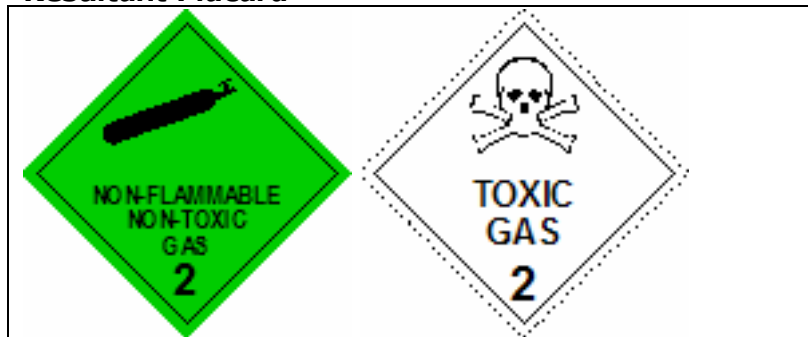
**Example 2 – Storage Area which contains Cryogenic Fluids only**

DG	Class/type	Sub-risk	PG	Quantity (kg or L)
Cryogenic Fluid 1	Cryogenic Fluid Class 2.1	-	-	485
Cryogenic Fluid 2	Cryogenic Fluid Class 2.2	-	-	995
Cryogenic Fluid 3	Cryogenic Fluid Class 2.3	-	-	530
Total				2,010

Given that the Mixed Class rule for 2000 kg or L applies to Cryogenic Fluids, the placard displayed for this storage area would have a Class 2.2 label and a Class 2.3 label because the total quantity is greater than 2000 L and the quantities of both the Class 2.1 and 2.3 Cryogenic Fluids are over 50 % of the quantity specified for Cryogenic Fluids in Item 1 of Schedule 1 (1000 L).

Total in storage area > 2,000 Cryogenic Fluid 1 (Class 2.1) < 50% of 1,000 Cryogenic Fluid 2 (Class 2.2) > 50% of 1,000 [Class 2.2 Label required] Cryogenic Fluid 3 (Class 2.3) > 50% of 1,000 [Class 2.3 Label required]
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**Resultant Placard**



**Rule 3 - Storage Areas where Aerosols and/or Cryogenic Fluids are Stored and Handled with Other Dangerous Goods**

In applying Clause 39(2)(c), Mixed Classes are aggregated and compared to the placarding quantity under Item 4(a) or 4(b), however the quantities of Aerosols and/or Cryogenic Fluids **are not** aggregated with other dangerous goods of the same class when determining if individual classes exceed 50% of the thresholds specified in Items 1, 2 and 3 of Schedule 1.

**Example 3 – Storage Area which contains Cryogenic Fluids and other Class 2 Dangerous Goods with thresholds up to 2000 kg or L**

DG	Class/type	Sub-risk	PG	Quantity (kg or L)
DG 1	Class 2.1	-	-	240
DG 2	Class 2.2	5.1	-	900
Cryogenic Fluid 1	Cryogenic Fluid Class 2.1	-	-	450
Cryogenic Fluid 2	Cryogenic Fluid Class 2.2	-	-	450
Total				2,040

Total in storage area > 2000 (Item 4a)  
 DG 1 (Class 2.1) < 50% of 500  
 DG 2 (Class 2.2, Sub-risk 5.1) < 50% of 2,000  
 Cryogenic Fluid 1 (Class 2.1) < 50% of 1,000  
 Cryogenic Fluid 1 (Class 2.2) < 50% of 1,000  
 Mixed Class Label required

**Resultant Placard**



**Example 4 – Storage Area which contain Aerosols, Cryogenic Fluids and other Class 2 Dangerous Goods with thresholds of 5000 kg or L**

DG	Class/type	Sub-risk	PG	Quantity (kg or L)
Aerosol 1	Aerosol Class 2.1	-	-	2,400
Aerosol 2	Aerosol Class 2.2	-	-	600
DG 1	Class 2.1	-	-	200
DG 2	Class 2.2	-	-	2,200
Cryogenic Fluid 1	Cryogenic Fluid Class 2.1	-	-	450
Cryogenic Fluid 2	Cryogenic Fluid Class 2.2	-	-	450
Total				6,300

Total in storage area > 5000 (Item 4b)  
 Aerosol 1 (Class 2.1) < 50% of 5,000  
 Aerosol 2 (Class 2.2) < 50% of 5,000  
 DG 1 (Class 2.1) < 50% of 500  
 DG 2 (Class 2.2) < 50% of 5,000  
 Cryogenic Fluid 1 (Class 2.1) < 50% of 1,000  
 Cryogenic Fluid 1 (Class 2.2) < 50% of 1,000  
 Mixed Class Label required

Note that no aggregation of dangerous goods, Aerosols and Cryogenic Fluids of the same Class is performed for the purpose of comparing to the Item 1 thresholds.

**Resultant Placard**

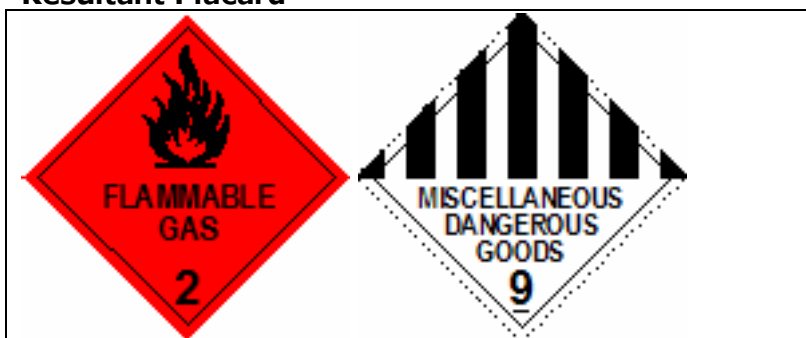


**Example 5 - Aerosols and another non-Class 2 dangerous goods with a 5000 kg or L threshold**

DG	Class/type	Sub-risk	PG	Quantity (kg or L)
Fly spray	Aerosol 2.1	-	-	3,000
Dry ice	Class 9	-	-	3,000
Total				6,000

Total in storage area > 5000 (Item 4b)  
 Fly spray (Aerosol Class 2.1) > 50% of 5,000 [Class 2.1 Label required]  
 Dry ice (Class 9) > 50% of 5,000 [Class 9 Label required]

**Resultant Placard**



**Example 6 - Aerosols and another Class of dangerous goods with a 5000 kg or L threshold**

DG	Class/type	Sub-risk	PG	Quantity (kg or L)
Fly spray	Aerosol 2.1	- - -	- - -	2,400
Compressed air	Aerosol 2.2	- - -	- - -	2,400
Product X	Aerosol 2.3	- - -	- - -	300
Dry ice	Class 9	- - -	- - -	2,400
Total				9,500

Total in storage area > 5000 (Item 4b)  
 Fly spray (Aerosol Class 2.1) < 50% of 5,000  
 Compressed air (Aerosol Class 2.2) < 50% of 5,000  
 Product X (Aerosol Class 2.3) < 50% of 5,000  
 Dry ice (Class 9) < 50% of 5,000  
 Mixed Class Label required (no other Class Label required)

**Resultant Placard**



If the quantity of dry ice in Example 6 was 2600 kg or L and, therefore, greater than 50 % of the threshold specified in Item 3 of Schedule 1 (5000 kg or L), a Class 9 label would be required. The resultant placard would then just be a Class 9 label. A Mixed Class label is only required where the placarding quantity specified in Item 4(a) or 4(b) is exceeded but no other label is required under Items 1, 2 and 3.