

RID/ADR,IMDG,CFR49
UN PORTABLE TANK T11
TC IMPACT APPROVED







TG06 RID-ADR TANK CODE

August 2020

TG06 RID-ADR TANK CODE

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RID-ADR TANK CODE

INTRODUCTION

This document is intended for ITCO Members when assessing the Tank Code displayed on a RID and ADR Tank Container.

RID European Agreement for Dangerous Goods by Rail and ADR European Agreement for Dangerous Goods by Road, are individual regulations but harmonised in a number of the tank container provisions including the requirements for Tank Codes. This document uses the term RID-ADR for ease of reading since most tank containers that are RID (Rail) approved are also approved to ADR (Road).

The purpose of the document is to differentiate the markings requirements for:

- RID-ADR 6.8 Tank Containers
- RID-ADR 6.7 UN Portable Tanks
- IMDG 6.7 UN Portable Tanks

Both RID and ADR Agreements provide two separate tank types:

- **Tank Container** Constructed to RID-ADR Chapter 6.8 and operated to the provisions of Chapter 4.3
- UN Portable Tank Constructed to RID-ADR Chapter
 6.7 and operated to the provisions of Chapter 4.2

IMDG 6.7 provides the equivalent design and construction as RID-ADR 6.7

 UN Portable Tank - Constructed to Chapter 6.7 and operated to the provisions of Chapter 4.2

RID-ADR Tank Containers and UN Portable Tanks differ in design and construction and allowable use. The tanks display different marking systems:

- <u>Tank Code</u> RID-ADR 6.8 tank containers display a Tank Code and used in accordance with Chapter 4.3.
- Portable Tank Instruction RID-ADR 6.7 UN Portable tanks display a Portable Tank Instruction, commonly referred to as a T-Code and used in accordance with Chapter 4.2.

The applicable Tank Code and or Portable Tank Instruction is documented on the Tank Type Approval Certificate and replicated on the Initial Inspection certificate.

The RID-ADR Tank Container or UN Portable Tank should only display regulatory marks that are verified by the Tank Type Approval document.

A dual specification RID-ADR 6.8 Tank Container and UN Portable Tank should display both a Tank Code and a Tank Instruction.

Transport within RID-ADR Region

Both RID-ADR 6.8. Tank Containers and RID-ADR 6.7 UN Portable Tanks are allowed to be used throughout the region of the RID-ADR contracting states.

RID-ADR Chapter 4.3 regulate the use of 6.8 Tank Containers, RID-ADR Chapter 4.2 regulates the use of UN Portable Tanks.

If transporting substances classified as Dangerous Goods, the RID-ADR Tank Container or UN Portable Tank should display placards and marks to the provisions of RID-ADR Chapter 5.3.

An IMDG UN Portable Tank may be used when the land transport is a continuation of an IMDG international sea journey.

If transporting substances classified as Dangerous Goods, the UN Portable Tank should be used in accordance with Chapter 4.2 and display placards and marks to the provisions of IMDG Chapter 5.3.

Many IMDG UN Portable Tanks are constructed to dual specification RID-ADR 6.7 / IMDG 6.7 which provides for versatility of use within the region with or without a sea journey. The placards that are displayed depend upon whether the transport is designated a RID-ADR or an IMDG transport.



RID-ADR 6.8 TANK CODE

The Tank Code is provided in Chapter 4.3. and comprises a four-part alpha-numerical code to indicate:

- Type of tank
- Calculation Pressure
- Openings
- Safety valves/devices

Tank Codes are provided in two tables:

- Special provisions applicable to Class 2 Ref: RID-ADR 4.3.3
- Special provisions applicable to Classes 1 and 3 to 9
 Ref: RID-ADR 4.3.4

Part	Description	Tank Code			
1	Types of tank	L = tank for substances in the liquid state (liquids or solids handed over for carriage in the molten state);			
		S = tank for substances in the solid state (powdery or granular).			
2	Calculation pressure	G = minimum calculation pressure according to the general requirements of 6.8.2.1.14; or			
		1.5; 2.65; 10; 15 or 21 = minimum calculation pressure in bar (see 6.8.2.1.14).			
3	Openings (see 6.8.2.2.2)	A = tank with bottom-filling or bottom-dish=charge openings with 2 closures;			
		B = tank with bottom-filling or bottom-discharge openings with 3 closures;			
		C = tank with top-filling and discharge openings with only cleaning openings below the surface of the liquid;			
		D = tank with top-filling and discharge openings with no openings below the surface of the liquid.			
4	Safety valves/devices	V = tank with a breather device, according to 6.8.2.2.6, but no device protecting against the propagation of a flame; or non-explosion pressure shock resistant tank;			
		F = tank with a breather device, according to 6.8.2.2.6, fitted with a device protecting against the propagation of a flame; or explosion pressure shock resistant tank;			
		N = tank without a breather device according to 6.8.2.2.6 and nothermetically closed;			
		H = hermetically closed tank (see 1.2.1).			

Tank Codes Class 1 and 3 to 9

See Appendix 1 for RID-ADR 6.8/4.3 Tank Codes for Class 1 and 3 to 9 and Class 2

RID-ADR 6.8 Class 2 (liquefied gas)

The Tank Code applying to Class 2 Liquefied gas is required to include the actual test pressure Ref: RID-ADR 6.8.3.5.6

Display of RID-ADR Tank Code

The Tank Code may be displayed on the tank itself or the metal plate (data plate) attached to the tank. Ref: RID-ADR 6.8.2.5

Usually, industry chooses to consolidate the display of the Tank Code with the standard markings required by ISO 6346 on the rear end or the sides of the tank using 50mm to 100mm height marks.



Tank Code RID-ADR 6.8 L4BN.

- L Liquid
- 4 4 bar calculation pressure
- B Openings Bottom filling
- N Without breather device

Note.

The photograph is of a dual specification tank showing both a Tank Code and a UN Portable Tank instruction.

The tank is approved to RID-ADR, IMDG and CF49 (US DOT)

22K2 refers to the ISO Type Group Code 20ft, 8'6' high, Liquid, DG, >2.65 – <10 bar pressure



RID-ADR 6.7 Tank Instruction

The tank instruction is provided in Chapter 4.2 and comprises a "T" followed by a number to indicate:

- Test pressure
- Shell thickness
- Pressure-relief
- Bottom opening

Portable Tank Instructions are provided for:

- T1 T22 Liquid and solids
- T23 Self-reactive substances
- T50 Liquefied gas
- T75 Liquefied refrigerated gas

Ref: RID-ADR 4.2.5

	nstructions apply to	RTABLE TANK INSTRUC	of Class 1 and Class	ses 3 to 9. The gen
Portable tank instruction	Minimum test pressure (bar)	ments of Section 6.7.2 shall Minimum shell thickness (in mm-reference steel) (see 6.7.2.4)	Pressure-relief requirements* (see 6.7.2.8)	Bottom opening requirements ^b (see 6.7.2.6)
T1	1.5	See 6.7.2.4.2	Normal	See 6.7.2.6.2
T2	1.5	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T3	2.65	Sec 6.7.2.4.2	Normal	Sec 6.7.2.6.2
T4	2.65	Sec 6.7.2.4.2	Normal	Sec 6.7.2.6.3
T5	2.65	See 6.7.2.4.2	See 6.7.2.8.3	Not allowed
Т6	4	See 6.7.2.4.2	Normal	See 6.7.2.6.2
T7	4	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T8	4	See 6.7.2.4.2	Normal	Not allowed
Т9	4	6mm	Normal	Not allowed
T10	4	6mm	See 6.7.2.8.3	Not allowed
T11	6	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T12	6	See 6.7.2.4.2	See 6.7.2.8.3	See 6.7.2.6.3
T13	6	6mm	Normal	Not allowed
T14	6	6mm	See 6.7.2.8.3	Not allowed
T15	10	See 6.7.2.4.2	Normal	See 6.7.2.6.3
T16	10	See 6.7.2.4.2	See 6.7.2.8.3	See 6.7.2.6.3
T17	10	6mm	Normal	See 6.7.2.6.3
T18	10	6mm	See 6.7.2.8.3	See 6.7.2.6.3
T19	10	6mm	Sec 6.7.2.8.3	Not allowed
T20	10	8mm	See 6.7.2.8.3	Not allowed
T21	10	10mm	Normal	Not allowed
T22	10	10mm	See 6.7.2.8.3	Not allowed

RID-ADR 6.7 Tank instruction

Display of UN Portable Tank Instruction

The Tank Instruction may be displayed on the tank itself or the metal plate (data plate) attached to the tank. Ref: RID-ADR 6.7.2.20

Usually, industry chooses to display the Tank Instruction together with the markings required by ISO 6346.

The Tank Instruction is displayed on the tank rear end or the tank sides using 50mm to 100mm height marks



Displays UN Portable Tank Instruction T11

Tank instruction T11

T UN Portable Tank

11 6 bar test

6 mm equivalent shell thickness Normal pressure-relief Bottom opening, three closures

Dual Specification tanks

A tank may be designed and constructed to meet the provisions of more than one regulation.

The Type Approval Certificate records the regulations to which the tank is approved.

The tank should display each of the applicable markings required by the regulations e.g.

RID-ADR 6.8 Tank container / 6.7 UN Portable Tank

Display both:

- RID-ADR Tank Code
- UN Portable Tank Instruction

RID-ADR 6.7 UN Portable Tank / IMDG 6.7 UN Portable Tank

Display Tank instruction

For clarity, many tank owners often add marks:

- UN Portable Tank
- RID-ADR

Nb. The marks are usually displayed on both sides of the tank and or the rear end.

RID-ADR 6.8 Tank Containers / IMO Type 4

Display:

- RID-ADR Tank Code Ref: RID-ADR 6.8.2.5
- IMO Type 4 Ref: IMDG 6.8.3.1.3.5



Documents

Tanks should not display a Tank Code or Tank Instruction without documentary evidence supporting the marks.

The Tank Code and or Tank Instruction (T-Code) displayed on the tank should be confirmed by the Type Approval Certificate

This example Tank Container Type Approval Certificate confirms, in the section Applicable Regulation:



IMDG (2014), RID/ADR (2015), CFR 49 (2015), CSC 1972 (2014), ISO 1496-3 (2006), UIC 592 (2013), TIR 1975, TC & LRCCS (2015)

Approved Cargo Reference
As listed under UN Portable Tank instruction T11 & ADR L4BN

Certificate formats vary, but the documents denoting the Tank Code / Tank Instruction should be reflected by the marking displayed on the tank.

The Initial Inspection Certificate (IIC) also provides confirmation of the Tank Code / Tank Instruction.



RID-ADR 6.8 tanks are required to maintain a Tank Record which includes copies of Certificates which should include the Tank Code Ref.4.3.2.1.7

Periodic inspection and test certificates also record the Tank Code and or Tank Instruction. The certificates are not original documents from the time of construction. In the event of doubt reference should be made to the Type Approval.

Pre- 2008 and 2003

The Type Approval Certificate for older tanks, pre-2008 and especially pre-2003 might not provide the information required because the current provisions of RID-ADR were not in-force at the time of construction.

In such an event, the AIB should be consulted and the applicable Tank Code or Tank Instruction established by investigation of records.

IMDG Portable Tanks prior to 2003 were assigned IMO Type Portable Tank Codes (IMO Type 1, 2, 4 or 5).

The Type Codes were changed to the new system of UN Portable Tank Instruction in 2003.

IMO CCC.1/Circ.3, provides for amending the designated IMO Type Portable Tank Code to the applicable UN Portable Tank Instruction.

Modifications

If the tank is modified and the modification changes the applicability of the existing Tank Code or UN Portable Tank Instruction, the modification should be undertaken with the agreement of the AIB (Authorised Inspection Body).

The amended Tank Code and or Tank Instruction should be documented by the AIB to reflect the modified status.



Appendix 1

The following tables are extracts from ADR providing the Tank Code and Portable Tank Instructions.

The extracts are provided as a summary in context with TG-06. The summary excludes important foot-notes to the tables and associated provisions of the regulations.

Refer to the current edition of RID and ADR to study the tables together with associated content.

Extract from ADR 4.3.4

Part	Description	Tank Code
1	Types of tank	L = tank for substances in the liquid state (liquids or solids handed over for carriage in the molten state);
		S = tank for substances in the solid state (powdery or granular).
2	Calculation pressure	G = minimum calculation pressure according to the general requirements of 6.8.2.1.14; or
		1.5; 2.65; 10; 15 or 21 = minimum calculation pressure in bar (see 6.8.2.1.14).
3	Openings (see 6.8.2.2.2)	A = tank with bottom-filling or bottom-dish=charge openings with 2 closures;
		B = tank with bottom-filling or bottom-discharge openings with 3 closures;
		C = tank with top-filling and discharge openings with only cleaning openings below the surface of the liquid;
		D = tank with top-filling and discharge openings with no openings below the surface of the liquid.
4	Safety valves/devices	V = tank with a breather device, according to 6.8.2.2.6, but no device protecting against the propagation of a flame; or non-explosion pressure shock resistant tank;
		F = tank with a breather device, according to 6.8.2.2.6, fitted with a device protecting
		against the propagation of a flame; or explosion pressure shock resistant tank;
		N = tank without a breather device according to 6.8.2.2.6 and nothermetically closed;
		H = hermetically closed tank (see 1.2.1).



Extract from ADR 4.3.3 Special

Refer to the current edition of RID and ADR to study the table together with associated content.

Part	Description	Tank Code
1	Types of tank, battery-vehicle or MEGC	C = tank, battery-vehicle or MEGC for compressed gases;
		P = tank, battery-vehicle or MEGC for liquefied gases or dissolved gases;
		R = tank for refrigerated liquefied gases
2	Calculation pressure	X = value of the minimum relevant test pressure according to the table in 4.3.3.2.5; or
		22 = minimum calculation pressure in bar.
3	Openings (see 6.8.2.2 and 6.8.3.2)	B = tank with bottom filling or discharge openings with 3 closures; or Battery-vehicle or MEGC with openings below the surface of the liquid or for compressed gases;
		C = tank with top filling or discharge openings with 3 closures with only cleaning openings below the surface of the liquid;
		D = tank with top filling or discharge openings with 3 closures; or battery-vehicle or MEGC with no openings below the surface of the liquid.
4	Safety valves/devices	N = tank, battery-vehicle or MEGC with safety valve according to 6.8.3.2.9 or 6.8.3.2.10 which is not hermetically closed;
		H = hermetically closed tank, battery-vehicle or MEGC (see 1.2.1);



Extract from ADR 4.2.5.2 Portable Tank Instructions

Refer to the current edition of RID and ADR to study the table together with associated content.

T1 - T22 Portable Tank Instructions T1 - T22

These portable tank instructions apply to liquid and solid substances of Class 1 and Classes 3 to 9. The general provisions of Section 4.2.1 and the requirements of Section 6.7.2 shall be met.

Portable tank instruction	Minimum test pressure (bar)	Minimum shell thickness (In mm-reference steel) (See 6.7.2.4)	Pressure-relief requirements ^a (See 6.7.2.8)	Bottom opening requirements ^b (See 6.7.2.6)	
T1	1.5	See 6.7.2.4.2	Normal	See 6.7.2.6.2	
T2	1.5	See 6.7.2.4.2	Normal	See 6.7.2.6.3	
T3	2.65	See 6.7.2.4.2	Normal	See 6.7.2.6.2	
T4	2.65	See 6.7.2.4.2	Normal	See 6.7.2.6.3	
T5	2.65	See 6.7.2.4.2	See 6.7.2.8.3	Not allowed	
T6	4	See 6.7.2.4.2	Normal	See 6.7.2.6.2	
T7	4	See 6.7.2.4.2	Normal	See 6.7.2.6.3	
T8	4	See 6.7.2.4.2	Normal	Not allowed	
Т9	4	6mm	Normal	Not allowed	
T10	4	6mm	See 6.7.2.8.3	Not allowed	
T11	6	See 6.7.2.4.2	Normal	See 6.7.2.6.3	
T12	6	See 6.7.2.4.2 See 6.7.2.8.3		See 6.7.2.6.3	
T13	6	6mm Normal		Not allowed	
T14	6	6mm See 6.7.2.8.3		Not allowed	
T15	10	See 6.7.2.4.2	Normal	See 6.7.2.6.3	
T16	10	See 6.7.2.4.2	See 6.7.2.8.3	See 6.7.2.6.3	
T17	10	6mm	Normal	See 6.7.2.6.3	
T18	10	6mm See 6.7.2.8.3		See 6.7.2.6.3	
T19	10	6mm See 6.7.2.8.3		Not allowed	
T20	10	8mm See 6.7.2.8.3		Not allowed	
T21	10	10mm	Normal	Not allowed	
T22	10	10mm	See 6.7.2.8.3	Not allowed	



Extract from ADR 4.2.5.2 Portable Tank Instructions

Refer to the current edition of RID and ADR to study the table in full together with associated content. This extract shows part of the table as an example of the format.

T23 Portable Tank Instructions T23

This portable tank instruction applies to self-reactive substances of Class 4.1 and organic peroxides of Class 5.2. The general provisions of Section 4.2.1 and the requirements of Section 6.7.2 shall be met. The additional provisions specific to self-reactive substances of Class 4.1 and organic peroxides of Class 5.2 in 4.2.1.13 shall also be met. The formulations listed below may also be carried packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable.

UN No.	Substance	Minimum test pressure (bar)	Minimum shell thickness (mm- reference steel)	Bottom opening requireme nts	Pressure- relief requi- rements	Degree of filling	Control tempe- rature	Emergency tempe- rature
3109	ORGANIC PEROXIDE TYPE F, LIQUID tert-Butyl hydro- peroxidea, not more than 72% with water Cumyl hydro-peroxide, not more than 90% in diluent type A Di-tert-butyl peroxide, not more than 32% in diluent type A Isopropyl cumyl hydro-peroxide, not more than 72% in diluent type A p-Menthyl hydro-peroxide, not more than 72% in diluent type A Pinanyl hydro-peroxide, not more than 56% in diluent type A	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13		
3110	ORGANIC PEROXIDE, TYPE F, SOLID Dicumyl peroxide b	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13		
3119	ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED	4	See 6.7.2.4.2	See 6.7.2.6.3	See 6.7.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13	С	С
	tert-Amyl peroxyneodecanoate, not more than 47% in diluent type A						-10C	-5C
	tert-Butyl peroxyacetate, not more than 32% in diluent type B						+30C	+35C
	tert-Butyl peroxy-2- ethylhexanoate, not more than 32% in diluent type B						+15C	+20C



Extract from ADR 4.2.5.2 Portable Tank Instructions

The extract shows a small part of the table as an example of the format.

The specification of T50 Portable Tank Instructions is dependent upon the Liquefied gas to be transported in regard to maximum allowable working pressure, openings below liquid level, pressure-relief and maximum filling ratio.

Refer to the current edition of RID and ADR to study the full table together with associated content.

T50

Portable Tank Instruction (cont'd)

This portable tank instruction applies to non-refrigerated liquefied gases and chemicals under pressure (UN Nos. 3500, 3501, 3502, 3503, 3504 and 3505). The general provisions of Section 4.2.2 and the requirements of Section 6.7.3 shall be met.

UN No.	Non-refrigerated liquefied gases	Max. Allowable working pressure (bar): Small; Bare; Sunshield; Insulated respectively ^a	Openings below liquid level	Pressure-relief requirements ^b (See 6.7.3.7)	Maximum filling ratio
1060 Meth	Methylacetylene and propadiene mixture, stabilized	28.0	Allowed	Normal	0.43
		24.5			
		22.0			
		20.0			
1061	Methylamine, anhydrous	10.8	Allowed	Normal	0.58
		9.6			
		7.8			
		7.0			

T75

Portable Tank Instruction (cont'd)

T75

This portable tank instruction applies to refrigerated liquefied gases. The general provisions of Section 4.2.3 and the requirements of Section 6.7.4 shall be met.

