



R290 ice makers transport affaires

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ADR- Dangerous Goods Transport– R290

- Liquefied refrigerant gas Propane (R290) UN no 1978, class 2.1. according to ADR

UN No.	Name and description	Class	Classification code	Packing group	Labels	Special provisions	Limited and excepted quantities		Packaging			Portable tanks and bulk containers	
									Packing instructions	Special packing provisions	Mixed packing provisions	Instructions	Special provisions
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)
1978	PROPANE	2	2F		2.1	652 657 660 662	0	E0	P200		MP9	(M) T50	

- Class “2” means substance of gaseous nature
- Classification code “2F” means flammable liquefied hydrocarbon gas mixture..
- Labelling class “2.1”
- Specific requirements: 652, 657, 660, 662 apply to the transport of pressure cylinders.
- No. “0” means that the transport of the substance is not allowed according to chapter 3.4 of the ADR where the limit quantities of packaged products are established
- Code “E0” means that transport is not allowed as an excepted quantity.

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- Packing instructions "P200" means compliance with the construction requirements, tests and inspections of the gas container.

P200		PACKING INSTRUCTION (cont'd)										P200	
Table 2: LIQUEFIED GASES AND DISSOLVED GASES													
UN No.	Name and description	Classification code	LC ₅₀ ml/m ³	Cylinders	Tubes	Pressure drums	Bundles of cylinders	Test period, years ^a	Test pressure, bar	Filling ratio	Special packing provisions		
1978	PROPANE	2F		X	X	X	X	10	23	0.43	ra, v		

- Specifications for combined load "MP9" means that propane can be charged together with other substances of class 2, substances without risk to mix or that are not subject to ADR.
- Instructions for loads in gas containers "T50" means the necessary physical requirements, load capacity, feasibility, etc. .. for the continent.

R290 land transport

- Material with the number of UN 1978, would be exempt from being considered Dangerous Goods by chapter 1.1.3.6 of the ADR for weight up to **333 Kg** and cannot be transported as excepted quantities in any case neither by maximum net quantity per inner container nor by maximum net quantity by outer packaging.

1.1.3.6.3 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)
2	Substances belonging to packing group II and not classified in transport categories 0, 1 or 4 and substances and articles of the following classes: Class 1: 1.4B to 1.4G and 1.6N Class 2: group F aerosols: group F chemicals under pressure: UN No. 3501 Class 4.1: UN Nos. 3225 to 3230, 3531 and 3532 Class 4.3: UN Nos. 3292 Class 5.1: UN Nos. 3356 Class 5.2: UN Nos. 3105 to 3110 Class 6.1: UN Nos. 1700, 2016 and 2017 and substances belonging to packing group III Class 9: UN No. 3090, 3091, 3245, 3480 and 3481	333

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 this Annex, the total quantity of dangerous goods contained therein in kilograms or litres 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 litres;
- For compressed gases, adsorbed gases and chemicals under pressure, the water capacity of the receptacle in litres.

R290 transport by air

- Items would be classified under the following entry :

UN 3358 REFRIGERATORS containing flammable gas, Class 2.1, if they contain more than **100 grams** of this gas, they could not be exempted under special provision A103, which states the following:

Flammable liquefied gases must be contained within the components of the refrigerating machine. These components must be designed and tested at least three times the working pressure of the machinery. Refrigerating machines must be designed and constructed to contain the liquefied gas and prevent the risk of explosion or rupture due to the retention of the pressure of the components during normal conditions of transport. Refrigerating machines and their components are considered not subject to this Regulation if they contain less than 100 g of flammable, non-toxic liquefied gas.

R290 transport by sea


- It is dangerous commodity for maritime transport, so each shipment of this commodity will need the DGD and communication to the shipping company of the class and UN no., so that the shipowners authorize the shipments..

UN Number	PROPER SHIPPING NAME (Note: When there is more than one packing group or PSN the UN No. has been annotated with a, b, c)	Class or division	Subsidiary risk(s)	Packing Group	Stowage and Handling	Segregation
1978	PROPANE	2.1			Category E SW2	

SW2	Clear of living quarters.
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- We do not have data on maximum permitted loads. Several transport agencies have been questioned but no answer for the moment.

<http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Maritime-Safety-Committee-%28MSC%29/Pages/default.aspx>

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Q&A

Thanks for your attention