



Road & Sea Transport of Lithium Batteries

Overview of Road Transport of Lithium Batteries

FORBIDDEN			RESTRICTED				ACCEPTABLE				
	Packed	UN number	Packing Instruction / Special Provision	Limitations	Max weight or quantity per package	Packaging	Labels	Documentation	DG Option Code	Shipper Approved	Country Approved
Lithium Ion Batteries	Batteries only	UN 3480	P903 P908 P909	> 20 Wh / Cell > 100 Wh / Battery	N/A	UN certified	Class 9 LB Label	ADR Declaration	HZ	YES	YES
			Special Provision 188	≤ 20 Wh / Cell ≤ 100 Wh / Battery	30 kg Gross	Non UN strong and rigid	LB Mark	None	LB	NO	NO
	Packed with equipment	UN 3481	P903 P908 P909	> 20 Wh / Cell > 100 Wh / Battery	N/A	UN certified	Class 9 LB Label	ADR Declaration	HZ	YES	YES
			Special Provision 188	≤ 20 Wh / Cell ≤ 100 Wh / Battery	N/A	Non UN strong and rigid	LB Mark	None	LB	NO	NO
	Contained in equipment	UN 3481	P903 P908 P909	> 20 Wh / Cell > 100 Wh / Battery	N/A	Non UN strong and rigid	Class 9 LB Label	ADR Declaration	HZ	YES	YES
			Special Provision 188	≤ 20 Wh / Cell or ≤ 100 Wh / Battery	N/A	Non UN strong and rigid	LB Mark	None	LB	NO	NO
			Special Provision 188	≤ 20 Wh / Cell or ≤ 100 Wh / Battery	Max 4 cells or 2 batteries per package (not more than 2 packages per consignment) or button cells only	Non UN strong and rigid	None	None	NONE	NO	NO
Lithium Metal Batteries	Batteries Only Restricted on the TNT Air Network	UN 3090	P903 P908 P909	> 1 gr of Lithium / Cell > 2 gr of Lithium / Battery	N/A	UN certified	Class 9 LB Label	ADR Declaration	HZ	YES	YES
			Special Provision 188	≤ 1 gr of Lithium / Cell ≤ 2 gr of Lithium / Battery	30 kg Gross	Non UN strong and rigid	LB Mark	None	LB	NO	NO
	Packed with equipment	UN 3091	P903 P908 P909	> 1 gr of Lithium / Cell > 2 gr of Lithium / Battery	N/A	UN certified	Class 9 LB Label	ADR Declaration	HZ	YES	YES
			Special Provision 188	≤ 1 gr of Lithium / Cell ≤ 2 gr of Lithium / Battery	N/A	Non UN strong and rigid	LB Mark	None	LB	NO	NO
	Contained in equipment	UN 3091	P903 P908 P909	> 1 gr of Lithium / Cell > 2 gr of Lithium / Battery	N/A	Non UN strong and rigid	Class 9 LB Label	ADR Declaration	HZ	YES	YES
			Special Provision 188	≤ 1 gr of Lithium / Cell or ≤ 2 gr of Lithium / Battery	N/A	Non UN strong and rigid	LB Mark	None	LB	NO	NO
			Special Provision 188	≤ 1 gr of Lithium / Cell or ≤ 2 gr of Lithium / Battery	Max 4 cells or 2 batteries per package (not more than 2 packages per consignment) or button cells only	Non UN strong and rigid	None	None	NONE	NO	NO



Scope: This document covers Road Transport in ADR affiliated countries (i.e. mainly Europe) as well as global Sea transport

1. Introduction

Lithium batteries are considered as hazardous goods due to the fact that they can overheat and ignite under certain conditions.

For specific information on Air Transport, please consult the relevant TNT Reference Document or the applicable regulations.

2. Definitions, Classification & Identification

The term “lithium battery” refers to a family of batteries with different chemistries, comprising many types of cathodes and electrolytes. They are separated into:

LITHIUM ION BATTERIES (*sometimes abbreviated Li-ion batteries*)

Rechargeable batteries commonly used in consumer electronics. Also included within lithium-ion batteries are lithium polymer batteries.

Generally used in consumer electronics such as laptops, mobile phones, MP3 players, portable DVD players, calculators, GPS/navigation systems, cameras, camcorders, diving lamps, etc.

In the ADR and IMDG Code, Lithium Ion Batteries (including lithium polymer batteries) are classified/listed as follows:

UN Number	Proper Shipping Name	Class
UN3480	Lithium ion batteries	9
UN3481	Lithium ion batteries packed with equipment or Lithium ion batteries contained in equipment	9

LITHIUM METAL BATTERIES

Non-rechargeable/disposable batteries that have lithium metal or lithium compounds as an anode. Also included within lithium metal batteries are lithium alloy batteries.

Generally used in small, portable electronic devices, such as, watches, thermometers, calculators, remote car locks, backup batteries in computers and communication equipment, etc.

In the ADR and IMDG Code, Lithium Metal Batteries are classified/listed as follows:

UN Number	Proper Shipping Name	Class
UN3090	Lithium metal batteries	9
UN3091	Lithium metal batteries packed with equipment or Lithium metal batteries contained in equipment	9



3. Transport of Lithium Batteries as per ADR Special Provision 188

Shipments of lithium batteries that are compliant with Special Provision 188 of the ADR/IMDG Regulations are not subject to other provisions of the applicable regulations and can therefore be transported as “Excepted” Lithium Batteries.

ADR / IMDG Code Special Provision 188 – Requirement Overview

General:	Each cell or battery must be of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3. (the manufacturer of the battery should be able to confirm whether this is the case)	
Cell/Battery Capacity Limitations:	Lithium (UN3480 & UN3481)	Lithium (UN3090 & UN3091)
	Maximum Watt-hour rating: Cells: 20 Wh Batteries: 100 Wh <small>The Watt-hour (Wh) rating must be marked on the outside of the battery case except for batteries manufactured before 1 January 2009 which may be transported without this marking until 31 December 2010</small>	Maximum Lithium Content Cells: 1 gram Batteries: 2 gram* <small>* = aggregate lithium content</small>
Packaging of loose cells or batteries:	<p>Each cell or battery must be packed in inner packaging(s) that completely enclose the cell or battery. Each cell or battery must be protected so as to prevent short circuits (including protection against contact with conductive materials within the same packaging that could lead to a short circuit) Each inner package must be packed in a strong outer packaging that is conforming to 4.1.1.1, 4.1.1.2 and 4.1.1.5.</p> <p>Each package must be capable of withstanding a 1.2 m drop test in any orientation without:</p> <ul style="list-style-type: none"> • damage to cells or batteries contained therein • shifting of the contents so as to allow battery to battery (or cell to cell) contact • release of contents <p>Maximum gross weight per package: 30.0 kg Gross</p>	
Packaging of cells or batteries that are installed in equipment:	<p>Each cell or battery must be protected from damage and short circuit The equipment shall be equipped with an effective means of preventing accidental activation The equipment shall be packed in strong outer packaging constructed of suitable material of adequate strength and design in relation to the packaging’s capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained</p>	
Marking: <i>not applicable for:</i> <i>- Packages containing only button cell batteries installed in equipment (including circuit boards); and</i> <i>- Packages containing no more than four cells or two batteries installed in equipment, where there are no more than two packages in the consignment.</i>	<p>Each package must be labelled with a completed lithium battery mark:</p> <div> </div> <p>This marking must contain;</p> <ul style="list-style-type: none"> -> UN Number -> a telephone number where more information on the shipment and its content can be obtained <p>Marking specifications:</p> <ul style="list-style-type: none"> -> Design: see example. -> Minimum dimensions: 120 x 110 mm <p>The previous Lithium Battery marks are no longer acceptable as of 1 January 2019</p> <div> </div>	



Road & Sea Transport of Lithium Batteries

Documentation:	As of January 2017 the Lithium Battery Transport document is not mandatory as per ADR Special Provision 188.
	Shipments containing lithium batteries that are not compliant with all requirements above cannot be shipped as “Excepted” Lithium Batteries under SP 188 and consequently these shipments must be declared and shipped as “full” Dangerous Goods.

NOTE: “Section II” Lithium Battery shipments that are compliant for Air transport (i.e. as per section II of the relevant Packing Instructions from the IATA DGR) also comply with all requirements of ADR/IMDG Special Provision 188 and can therefore be transported by Road in ADR affiliated countries and globally by Sea

TNT - Requirements Overview

TNT Express consignment note requirements:	Collection Address (4)	must contain the telephone number of the shipper
	Dangerous Goods (7)	‘Yes’ must be ticked
	Goods Description (10)	must contain following statement as applicable: Road transport only: <i>“not restricted as per ADR SP188 “</i> Road & Sea transport: <i>“not restricted as per ADR/IMDG SP188”</i>
Data Entry requirements:	Option Code	LB

4. Transport of “Fully Regulated” Lithium Batteries

Regulatory requirements

Shipments containing lithium batteries that are not compliant with the requirements of Special Provision 188 are fully regulated. Consequently these shipments must be declared and shipped as ‘full’ Dangerous Goods.

The shipper is responsible for declaring/documenting, packaging, labelling and marking Dangerous Goods shipments as per the applicable regulations.

ADR / IMDG Requirements

For details on the regulatory requirements for such shipments please consult the relevant Regulations.

TNT requirements

TNT Express will accept Lithium Batteries in Dangerous Goods shipments for transport but only from specifically approved customers and with restrictions for the different origins/destinations, and services/products offered.