

What is the packing and handling procedure for lithium batteries?

Whenever packages containing lithium batteries fulfilling the exemption of part 1 of the applicable packing instructions are to be prepared for transport, it must be ensured that only staff trained and advised in accordance to this "Packing and Handling Procedure" will take over the required duties to prepare the shipment for transport.

What type of packaging do you need for lithium ion batteries?

Depending on the Watt-hour rating for lithium ion cells or batteries or the lithium metal content for lithium metal cells or batteries, the packaging required may need to be UN specification or may be simply strong, rigid packaging that is strong enough to withstand the shocks, mechanical handling, and loading encountered in transport.

How many lithium ion batteries are in a package?

For example, a package containing a notebook computer may have 1 lithium ion battery and 2 small lithium metal coin cells installed in the product. This single package does not require the lithium battery handling label.

What is Class 9 lithium battery packaging?

For lithium metal cells and batteries prepared for transport on passenger aircraft as Class 9: -- cells and batteries offered for transport on passenger aircraft must be packed in intermediate or outer rigid metal packaging surrounded by cushioning material that is non-combustible and non-conductive and placed inside an outer packaging. II.

Are lithium ion batteries included in equipment?

This applies to UN 3481 Lithium ion batteries contained in equipment (see Section II of Packing Instruction 967) and UN3091 Lithium metal batteries contained in equipment (see section II of Packing Instruction 970), except that button cells installed in equipment (including circuit boards) need not be considered.

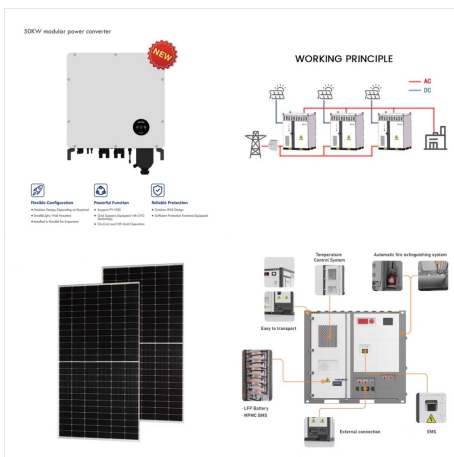
Can lithium batteries be packed in the same packaging?

Cells and batteries must not be packed in the same outer packaging, or placed in an overpack with, dangerous

LITHIUM BATTERIES PACKING GROUP



goods classified in Class 1 (except 1.4S), Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) and Division 5.1 (oxidizers). Maximum 35 kg net quantity of lithium batteries or cells per package.



Our tailored packaging designs help safeguard high-value lithium-ion (Li-ion) battery systems and EV components for domestic and international shipping. Improving Sustainability in Supply Chains We design packaging to lower carbon foot-print and minimize waste while enhancing supply-chains optimization.

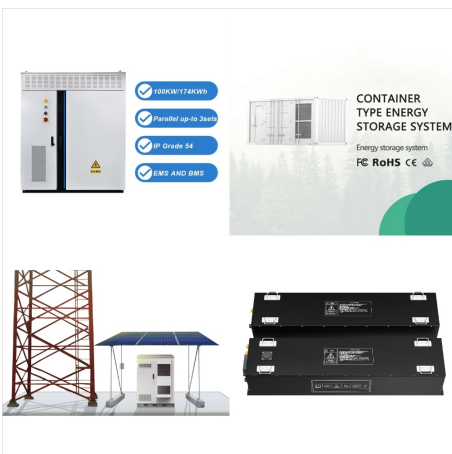


Transport Document: For lithium battery shipments, this specifies the UN number, shipping name, hazard class, packing group, and total quantity. Pilot Notification: For shipping lithium batteries by air, pilots must receive written information on the presence and location of lithium batteries. Packaging Certifications:

LITHIUM BATTERIES PACKING GROUP



The symbol (group of batteries, one damaged and emitting flame, above the UN number for lithium ion or lithium metal batteries or cells) must be black on white or a suitable contrasting background. The shipper bears the responsibility to safely pack, label, mark the lithium battery shipment and declare as per the Regulations.



Before this rule change, some articles were assigned packing groups (such as wet batteries) and others were not (such as aerosols). When articles were assigned packing groups, the packing groups assigned did not relate to the degree of hazard posed by the material, as packing groups are meant to do. Lithium ion batteries packed with



A lithium ion or lithium metal battery packed with equipment is not embedded in the device. An example would be a power tool packed alongside a spare battery. Shipping Document Where applicable, the packing group in roman numerals; The quantity in metric (e.g., kg or L) for transports originating in Canada

LITHIUM BATTERIES PACKING GROUP



Lithium Ion Battery Packaging. DOT Final Rule HM-224F incorporated a number of significant changes to the regulatory requirements for shipping lithium batteries and cells. Let HAZPlus help you comply with these new regulations. HAZPlus now offers compliant, easy to use packaging solutions for Lithium Batteries of all types.



Packing group: Labels: 9A. Special provisions: 188 230 310 348 360 376 377 387 390 670: Limited quantities: 0: Excepted quantities: E0: LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries) Technical name (SP 274, 318, 61, 220) Alternative PSN: Class: 9



This means from 1 st April 2022 standalone lithium batteries (not packed with equipment or contained in equipment) are only permitted to be sent by sections 1A & 1B. The cells or batteries are completely enclosed in inner packagings then placed with the equipment in packaging that meets the Packing Group II performance standards.

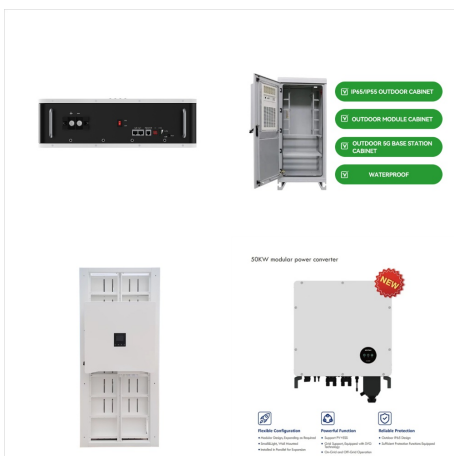
LITHIUM BATTERIES PACKING GROUP



Adequate Instruction for Shipping Section II Lithium Batteries Section II of the lithium battery packing instructions, PI 965???PI 970, include a requirement that "Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities".



The classification describes which labels, markings and documentation are required. Step two is finding a specialised packaging supplier or manufacturer that can help you developing the right type of packaging for your Lithium ion batteries. A partner who can offer guidance on regulation and has the experience in fire testing Lithium ion batteries.

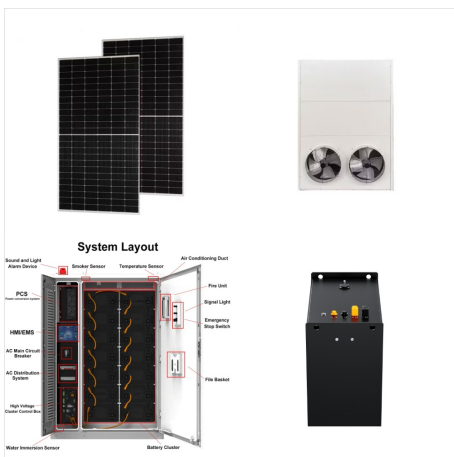


UN 3480 Lithium ion batteries. Lithium ion cells and batteries are prohibited from carriage as cargo on Cathay Dragon aircraft. This applies to Section IA, IB and Section II of Packing Instruction 965. This prohibition does not apply to: ??? lithium ion cells and batteries packed with or contained in equipment (UN 3481) in accordance with PI 966

LITHIUM BATTERIES PACKING GROUP



Substance information for UN 3480 - Lithium ion batteries including lithium ion polymer batteries based on the Hazardous Materials Table (Title 49 CFR 172.101) to assist in preparing a risk assessment for loading, transporting and storing hazardous materials. Packing Group. n/a (6) Labels (7) Special Provisions (?172.102)



? 173.185 Lithium cells and batteries. As used in this section, consignment means one or more packages of hazardous materials accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address. Equipment means the device or apparatus for which the lithium cells or batteries will ???

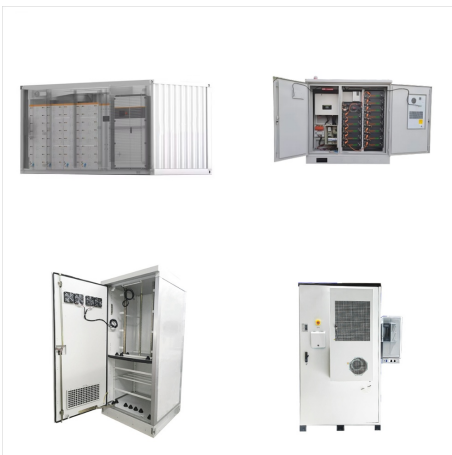


??? Lithium metal batteries "packed with" or "contained in" equipment: UN3091 ??? Only allow small and medium-sized lithium cells (<60 watt-hours for ion or <5 grams for metal) and batteries (<300 watt-hours for ion or <25 grams for metal) to be shipped as partially regulated in the 48 contiguous states by highway

LITHIUM BATTERIES PACKING GROUP



Substance information for UN 3091 - Lithium metal batteries packed with equipment including lithium alloy batteries based on the Hazardous Materials Table (Title 49 CFR 172.101) to assist in preparing a risk assessment for loading, transporting and storing hazardous materials. More than one packing group is indicated for this entry



This also improves usability in terms of packing and retrieval of the batteries. Key benefits of Zarges 40582 lithium battery packaging. Approved for transporting lithium batteries by road, air, and sea; Available with Cirrux inserts featuring intumescent (foaming when heated) coating



Due to their dual hazard properties associated with their chemical and electrical content, Li-ion batteries (UN 3480) as well as Li-ion batteries contained in equipment or packed with ???

LITHIUM BATTERIES PACKING GROUP



966 Lithium Ion Batteries Packed with Equipment
UN3481 (if over the excepted limit) Lithium Ion Cell
or Battery Contained in Equipment 967 Lithium Ion
Batteries Contained ground in a Packing Group I
packaging if the requirements of 49 CFR 173.185
and Special Provision 29 are met. Greatbatch and
Electrochem maintain a USDOT approval



If a package contains a combination of lithium
batteries within equipment and lithium batteries
packed with equipment ??? that meet limits for
lithium cells or batteries of Section II ??? the
following requirements will also apply: GWP Group.
Unit 20, Chelworth Park, Cricklade, Swindon, SN6
6HE. Business hours: 08.00 a.m. to 17.00 p.m



Shipping Lithium Batteries Updated: September
2022 Produced by AOC and ASH.2022-ASH-017.
About this document: This document provides
awareness of the International Civil Aviation
Organization's (ICAO) 2021 -2022 Edition of the
Technical Instructions (Doc 9284) requirements for
lithium batteries. This document does not replace
any regulation

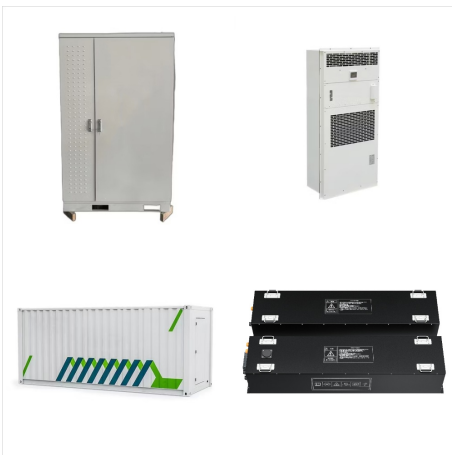
LITHIUM BATTERIES PACKING GROUP



PI 965 for lithium ion cells and batteries packed alone (UN3480) on cargo aircraft only (CAO). PI 968 for lithium metal cells and batteries packed alone (UN3090) on cargo aircraft only (CAO). Both PI 965 and PI 968 have a multitude of State and Operations variations that may effect the transport of a lithium cell or battery. The effect of these



How to pack Lithium-ion batteries? When shipping lithium-ion batteries, you can't simply put them in any box and send them on their way. These batteries require specific shipping solutions, and the solution that is right for you depends on several factors. If you have never shipped lithium-ion batteries before, you may not be familiar with



ADR data for UN3090 LITHIUM METAL BATTERIES (including lithium alloy batteries)
Packing group: Labels: 9A: Danger number:
Transport category: 2: Tunnel code (E) Special provisions: 188 230 310 376 377 387 636: Limited quantity: 0: Excepted quantity: E0: Packing instructions: P903 P908 P909 P910 P911 LP903 LP904 LP905 LP906: Special packing

LITHIUM BATTERIES PACKING GROUP



The provisions of the DGR with respect to lithium batteries may also be found in the IATA lithium Battery Shipping Guidelines (LBSG) 8. th. Edition. In addition to the content from the DGR, the LBSG also has additional classification flowcharts and detailed packing and documentation examples for lithium batteries.

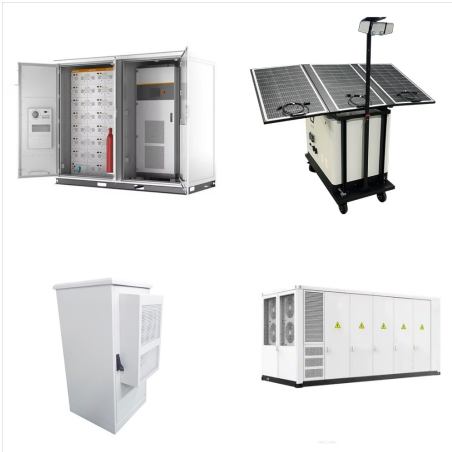


Battery packaging for Lithium Ion is tightly regulated by various legislation, including UN3480, UN3481 and IATA specific rules. Class 9 Packing Group II, tunnel category E ADR/RID-Labels 9 Proper shipping name Lithium-Ion batteries, UN 3480 ADR Special Provisions 188, 230,310, 636 will apply and Packing Instruction P903, P903a and P903b.



Substance information for UN 3481 - Lithium ion batteries packed with equipment including lithium ion polymer batteries based on the Hazardous Materials Table (Title 49 CFR 172.101) to assist in preparing a risk assessment for loading, transporting and storing hazardous materials. More than one packing group is indicated for this entry

LITHIUM BATTERIES PACKING GROUP



Regulations get considerably more restrictive if your large format lithium battery is damaged, defective or recalled (DDR): DDR lithium-ion batteries cannot be compliantly shipped by air, regardless of capacity or weight. DDR lithium-ion batteries require UN specification packaging rated to Packing Group I???the highest category of potential



If battery is not installed, must ship as "UN 3091, Lithium Metal Batteries Packed with Equipment" or "UN 3481, Lithium Ion Batteries Packed with Equipment", as applicable. There is no battery size designation (small, medium or fully regulated) for these entries.



(A) The mark must be in the form of a rectangle or a square with hatched edging. The mark must be not less than 100 mm (3.9 inches) wide by 100 mm (3.9 inches) high, and the minimum width of the hatching must be 5 mm (0.2 inches), except marks of 100 mm (3.9 inches) wide by 70 mm (2.8 inches) high may be used on a package containing lithium batteries when the package is ???

LITHIUM BATTERIES PACKING GROUP



Irrespective of the quantity limits in Column 9B of the ?172.101 table, a lithium battery, including a lithium battery packed with, or contained in, equipment that otherwise meets the applicable requirements of ?173.185, may have a mass exceeding 35 kg if approved by the Associate Administrator prior to shipment.



Packing Instructions 966 Checklist ??? applies to Lithium ion cells packed with equipment and Lithium ion batteries packed with equipment (Class 9 Miscellaneous dangerous goods - UN 3481)..
EXCERPT - Dangerous Goods Training (DGR 1.5)
??? refer to this blog post for training centers;
Classification (DGR 3.9.2.6) ??? Refer to MSDS
??? Material Safety Data Sheet ???