



POSTAL SERVICE

Revision to Mailing Standards for Lithium Batteries

AGENCY: Postal Service™.

ACTION: Notice

SUMMARY: The Postal Service is revising Publication 52, *Hazardous, Restricted, and Perishable Mail*, in various sections to provide new mailing standards for lithium batteries. Publication 52 was developed to provide expanded requirements for the mailing of hazardous, restricted, and perishable materials.

DATES: *Anticipated date of publication in the Postal Bulletin:* August 17, 2017.

FOR FURTHER INFORMATION CONTACT: Michelle Lassiter 202-268-2914, or Kevin Gunther (202) 268-7208.

SUPPLEMENTARY INFORMATION:

Overview

Pursuant to the *Mailing Standards of the United States Postal Service*, Domestic Mail Manual (DMM®) 601.8.2, Publication 52 provides mailing standards specific to hazardous, restricted and perishable items and materials, including lithium batteries. Publication 52 is provided in its entirety on the Postal Explorer® website at <http://pe.usps.com/text/pub52/welcome.htm>.

Background

The International Civil Aviation Organization (ICAO) published Addendum No. 3 to its Technical Instructions (TI) on January 15, 2016, and Addendum No. 4 on February 23, 2016 (<http://www.icao.int/safety/DangerousGoods/Pages/default.aspx>). In these

addenda, ICAO announced new regulations for lithium batteries in international air transportation. The ICAO revisions, with an effective date of April 1, 2016, detailed a number of new provisions including:

- The prohibition of lithium-ion (and lithium-ion polymer) batteries, shipped separately from the equipment they are intended to operate (categorized as identification number UN3480), on passenger aircraft.
- The restriction of UN3480 batteries and cells shipped via cargo aircraft to a maximum state of charge (SOC) of no more than 30 percent.
- The limitation of section II, UN3480 batteries and cells to a single package, when sent as a part of a consignment or overpack via cargo aircraft.
- The required use of an approved Cargo Aircraft Only (CAO) label on all packages of UN3480 batteries and cells transported via cargo aircraft.

On September 7, 2016 (81 FR 61742), the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a notice of proposed rulemaking [Docket Number 2015-0273 (HM-215N)] titled *Hazardous Materials: Harmonization with International Standards (RRR)* with the intention to maintain consistency with international regulations and standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations, and vessel stowage requirements.

On February 22, 2017 (82 FR 11372), the Postal Service published a *Federal Register* notice, including invitation to comment, titled *Revision to Mailing*

Standards for the Transport of Lithium Batteries. In this notice, the Postal Service announced its intent to revise Publication 52 to align with the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) with regard to the transportation of lithium batteries by air. Specifically, the Postal Service conveyed its intent to:

- Prohibit UN3480 lithium-ion and lithium polymer batteries in Postal Service air-eligible products.
- Revise its quantity limitations for UN3480 lithium-ion and lithium polymer batteries in surface transportation to align with those for lithium metal batteries, changing from the previous 8 cells or 2 batteries to an aggregate mailpiece limit of 5 pounds (while retaining its previous battery capacity limitations of 20 Wh/cell and 100 Wh/battery).

The Postal Service also expresses its intent to revise Publication 52 to align with lithium battery regulations described in PHMSA's proposed rule of September 7, 2016. At that time, the Postal Service proceeded with its *Federal Register* notice, expecting the publication of PHMSA's final rule to occur shortly thereafter with few significant changes to its proposed regulations for lithium batteries. With respect to PHMSA's expected revisions to its lithium battery regulations, the Postal Service announced its intent to make the following changes to its mailing standards:

- Eliminate the current text marking option for mailpieces required to bear, or optionally permitted to bear, lithium battery markings, and to limit markings to DOT-approved lithium battery handling labels only.

Mailpieces restricted to surface transportation only, including those containing UN3090, *lithium metal batteries* shipped separately, will continue to be required to bear the current text marking in addition to a DOT-approved lithium battery handling label.

- Eliminate the requirement for accompanying documentation with mailings of lithium batteries.
- Add the new DOT class 9 hazard warning label for lithium batteries to Publication 52, Exhibit 325.1, *DOT Hazardous Materials Warning Labels: PROHIBITED IN THE MAIL*. Packages containing lithium batteries that are required to bear this label are prohibited in Postal Service networks.
- Align with PHMSA regarding the requirement for outer packaging used to contain small lithium batteries to be rigid and of adequate size so the handling mark can be affixed on one side without the mark being folded.
- Provide a limited exception to permit the use of padded or poly bags when cells or batteries are afforded equivalent protection by the equipment in which they are contained, but to limit this exception only to batteries meeting the Postal Service definition of a button cell battery in section 349.11d of Publication 52.
- Take no action with regard to the requirement for lithium battery markings to appear on packages containing lithium cells or batteries, or lithium cells or batteries packed with, or contained in, equipment when there are more than two packages in the consignment, and continue to define a consignment in postal terms as a single parcel.

On March 30, 2017 (82 FR 15796), PHMSA published a final rule titled *Hazardous Materials: Harmonization with International Standards (RRR)*, following on its proposed rule of September 7, 2016. It was noted that few significant changes were made to the proposals relating to lithium batteries, from those published on September 7, 2016.

Comments and Postal Service Responses

The Postal Service received four responses to its notice of February 22, 2017, with all commenters addressing multiple issues. Commenters included two pilot associations, one hazardous materials transportation trade association, and the Congressional Delegation from the state of Alaska.

The pilot associations generally supported the Postal Service-proposed restrictions, and requested the Postal Service to implement additional controls on lithium batteries not contemplated in its proposed rulemaking. The trade association voiced concern with the Postal Service's intent to take no action towards alignment with PHMSA's revised definition and restrictions relating to consignments of more than a single package containing lithium batteries, and with the Postal Service-proposed implementation date. The Alaska Congressional Delegation expressed concern with regard to the impact of the proposed restrictions on those living in remote areas not serviced by cargo aircraft or ground transportation. The specific comments and Postal Service responses are as follows:

Commenter 1:

One pilot association related its support for the proposed revisions as written and suggests the following additional steps be taken by the Postal Service:

- The Postal Service should require compliance and harmonization with ICAO TI with regard to “postal pouches and containers” being required to bear markings and be accompanied by written notification -- consistent with ICAO overpack requirements.
- The Postal Service should require compliance and harmonization with Universal Postal Union (UPU) Technical Standards for both international and domestic transportation.
- The Postal Service should require all lithium batteries to be shipped in non-flammable packaging.
- The Postal Service should permit airlines and other freight handlers to inspect postal packages to ensure the package can be safely shipped.
- This commenter states that when a carrier is concerned with risk mitigation, the Postal Service should not be exempt from regulations applying to commercial carriers. The commenter states that lithium battery shipments from USPS might be presented (grouped) in opaque containers that the carrier is prevented from opening. The commenter opines that such a limitation results in the carrier not being able to determine which shipments contain lithium batteries, limiting the carrier’s ability to mitigate that risk. The commenter also notes that this

limitation prevents the carrier from inspecting packages for potential damage to the package contents, possibly enhancing the carrier's risk.

Postal Service Response to Commenter 1:

The Postal Service is currently investigating options to require the preparation of sacks in accordance with the overpack requirements applicable to commercial shippers; this study is ongoing, however, and the Postal Service defers action on this matter at this time. The Postal Service intends to investigate the feasibility of modifying its operational processes to allow for the alignment with DOT overpack marking regulations, and to reexamine this issue at a later date. The Postal Service expects any such solution to include an enhanced process for the identification and segregation of mailpieces bearing lithium battery marks in Postal Service networks. As a result, the Postal Service is including an additional requirement for lithium battery handling marks to be placed on the address side of any and all mailpieces bearing these marks.

In response to the second suggestion regarding harmonization with UPU Technical Standards for both international and domestic (air) transportation, the Postal Service does not believe that the implementation of such restrictions would be a reasonable action at this time. Were the Postal Service to adopt UPU lithium battery restrictions, this would result in the elimination of all lithium batteries packaged "with equipment" in domestic air transportation, and would reduce the number of cells installed in equipment, from the current eight cells to the UPU limitation of four cells. In addition, this would eliminate the current exception for very small batteries installed in or packaged with equipment. The

adoption of these limitations would result in the Postal Service being much more restrictive than commercial transportation providers and could create an undue hardship on mailers with few or no other options.

With regard to the suggested use of nonflammable packaging for lithium battery shipments, including a new requirement of this nature would fall outside the scope of this rulemaking. The Postal Service, however, is open to exploring the use of nonflammable packaging for lithium batteries at a future date. Factors to consider include whether such packaging is effective, affordable, and commercially available.

In response to the final two suggestions regarding airlines and other freight handlers inspecting postal packages and risk mitigation when postal packages are enclosed in sacks, the Postal Service believes any such measure is best addressed by its suppliers in their relations with supply management personnel. It must be kept in mind, however, that most packages are currently classified as sealed against inspection, and as such, any effort to conduct inspections of the contents of packages sealed as such would need to account for all applicable legal limitations. Moreover, it should be stressed that the Postal Service, unlike most commercial carriers, limits lithium batteries in its networks to only those meeting the conditions of the exception for smaller cells and batteries under 49 CFR 173.185(c).

Commenter 2:

Another pilot association related its support for the proposed prohibition of UN3480 batteries in Postal Service air transportation, stating that the Postal

Service's proposed action is consistent with international standards and responsive to the expanding safety hazards posed by lithium batteries. In support of the prohibition, the commenter maintains that UN3480 batteries can still be shipped in cargo aircraft through commercial carriers. In addition, the commenter:

- Expresses its wish that the Postal Service eventually implement packaging standards capable of containing any thermal event within the package itself, and capable of protecting lithium batteries from external fire threats.
- States that the shipment of lithium-ion batteries in air transportation should continue with specified additional requirements to ensure their safe carriage, including:
 - Active fire detection and suppression systems should be required on all commercial aircraft carrying lithium batteries.
 - The elimination of packaging materials, such as polypropylene, that can fuel onboard fires. The Postal Service currently uses polypropylene mail totes (assumed to refer to flats and letter trays), which should not be used in air transportation.
- States that its concern with polypropylene in commercial air transportation is shared by the National Transportation Safety Board (NTSB) and the Federal Aviation Administration (FAA); and
- States that all operators engaged in the transport of lithium batteries should be required to carry such batteries within an aircraft compartment

or container with an active fire suppression system capable of mitigating the risk of a lithium battery thermal event.

Postal Service Response to Commenter 2:

The Postal Service appreciates the commenter's support for the prohibition of UN3480 batteries in Postal Service air networks. With regard to the other issues raised by this commenter, some fall outside the scope of this rulemaking.

With regard to the first suggestion, regarding the eventual implementation of mailing standards requiring packaging capable of containing a thermal event within the package itself or providing protection from external fire, the Postal Service repeats that it is open to exploring the use of nonflammable packaging for lithium batteries at a future date. Factors to consider include whether such packaging is effective, affordable, and commercially available.

In reference to the suggestion regarding fire detection and suppression systems on aircraft carrying lithium batteries, this comment is outside the scope of this rulemaking. The Postal Service has no immediate plans to require its contracted air carriers to use these systems as a condition for carrying mail. Of course, all carriers have the option to install these systems on their own at any time.

With regard to the remaining suggestions concerning the use of polypropylene mail handling units in air transportation, the Postal Service believes these recommendations to be outside the scope of its rulemaking, but will nonetheless weigh the merits of this option separately.

Commenter 3:

One commenter, a trade association, expresses its gratitude to the Postal Service for its continuing efforts to align Publication 52 with the DOT's Hazardous Materials Regulations (HMR). The commenter states that significant differences between the HMR and mailing standards create confusion with shippers who use the services of commercial transportation providers in addition to the mail. The commenter also states that alignment with the HMR is especially critical in the current environment where the Postal Service may cover only the first or last mile and a commercial carrier (regulated by the HMR) completes the remaining component of the transportation. In addition, the commenter expresses concern with the Postal Service proposal to define a *consignment* as a single package, noting that there may be situations where multiple packages are tendered to the Postal Service or one of its commercial carriers, and requests that the Postal Service consider requiring the lithium battery mark in these situations. The commenter advises that some air carriers have implemented prohibitions of lithium batteries prepared under the exception for smaller cells or batteries, and states that without the requirement for the marking of batteries included in a single consignment, some package shippers could utilize this exception to tender large quantities of lithium batteries to the Postal Service that could ultimately be transported by commercial air carriers. The commenter requests that the Postal Service consider revising Publication 52 to require a mailer tendering two or more packages, containing no more than two batteries or four cells, to mark each of those packages with a lithium battery handling mark, or (until December 31,

2018) a lithium battery handling label. The commenter further recommends that the Postal Service adopt the same 2-year transitional period offered by the HMR and the international entities with regard to the use of lithium battery marks. The commenter recommends that the Postal Service permit use of the new mark immediately, but allow for use of existing marks and labels until January 1, 2019.

Postal Service Response to Commenter 3:

With regard to defining and restricting lithium battery consignments, the Postal Service has reconsidered its earlier proposal and has decided to add language to Publication 52 to define a lithium battery consignment within the context of shipments transported through the mail, and to add new restrictions for packages prepared within a single consignment. The details of these new mailing standards will be described later in this notice.

With regard to the transitional period for the use of marks and labels, the Postal Service intends to align its transitional period with that permitted in the HMR. As the Postal Service has done in the past, it will add language to Publication 52 that requires the use of a DOT-approved lithium battery handling mark. This will allow mailers to use previously approved marks and labels through the duration of the DOT transition period. At present, the Postal Service expects to allow mailers to continue to use previously approved lithium battery marks until December 31, 2018, the date announced by PHMSA in its final rule of March 30, 2017.

Commenter 4:

The Alaska Congressional Delegation requests the Postal Service to include a provision to authorize the continued transport of lithium batteries needed to support urgent patient needs on passenger aircraft to remote locations and “at a state of charge greater than 30%.” The Alaska Congressional Delegation also requests that consideration be given to the following points:

- First, the Alaska Congressional Delegation questions whether the Postal Service has assessed the impact of the proposed restriction of UN3480 batteries on rural communities not regularly serviced by cargo aircraft.
- Second, the Alaska Congressional Delegation asks whether the Postal Service will provide appropriate provisions for the shipment of UN3480 batteries used to power medical devices, as well as other lithium battery powered equipment (emergency beacons, generators and back-up power), to these remote locations in the “interim final rule” to avoid significant public health and safety impacts.

Postal Service Response to Commenter 4:

The Postal Service would be willing to entertain requests for exceptions from medical equipment suppliers specific to the mailing of UN3480 batteries in Postal Service products transported through the air, when these batteries are needed for the emergency support of critical medical devices, fall within the established capacity limits for lithium-ion batteries in Postal Service networks, and no other reasonable alternative exists. In response to any such request, supported by adequate justification, the Postal Service would provide written

authorization to the medical equipment supplier to mail UN3480 batteries via USPS air-eligible products. To minimize the risk of conflicting with DOT provisions, the Postal Service plans to consult with the DOT prior to the approval of specific authorizations relating to UN3480 batteries in USPS air transportation.

With regard to other lithium battery-powered devices, such as emergency beacons, the Postal Service will provide an option for the mailing of UN3480 in air transportation. This option will be restricted to UN3480 batteries meeting the current USPS capacity limitation of 20 Wh/cell and 100 Wh/battery, and the current quantity limitations of eight cells or two batteries. Batteries mailed under this option must meet the conditions described in 349.222 of Publication 52, and 49 CFR 173.185(c), and will be restricted to intra-Alaska shipments (both mailed from, and delivered in Alaska).

Revisions to Publication 52

Within the next several weeks, the Postal Service will revise Publication 52 to reflect the new mailing standards. With regard to lithium batteries, the Postal Service will:

- Generally prohibit UN3480 lithium-ion and lithium polymer batteries in USPS air-eligible products.
- Revise its quantity limitations for UN3480 lithium-ion and lithium polymer batteries in surface transportation to align with those for lithium metal batteries, changing from the previous eight cells or two batteries to an aggregate mailpiece limit of 5 pounds.

- Accept and evaluate requests for exceptions to mail UN3480 batteries, used to support critical medical devices, via domestic air-eligible products. The batteries must be within current Postal Service capacity and quantity limitations, needed for the emergency support of critical medical devices, and no other reasonable alternative exists to affect their delivery within an acceptable time period. The Postal Service expects to defer revision to Publication 52 relating to these authorizations until it has determined the level of interest, and need for these exceptions. Prior to granting any authorizations, the Postal Service plans to consult with PHMSA to assure alignment with their approval processes for commercial carriers. Interested mailers may direct requests to the Manager, Product Classification (see Publication 52, section 214 for the complete address).
- Provide that UN3480 batteries, meeting the current Postal Service capacity limitations and quantity restrictions, may be mailed via air-eligible products, provided these mailings are both mailed and delivered within the state of Alaska.
- Eliminate the current text marking option for mailpieces required to bear, or optionally permitted to bear, lithium battery markings, and limit markings to DOT-approved lithium battery handling marks only.
- Require a separate text marking in addition to a DOT-approved lithium battery handling mark for mailpieces containing UN3480 and UN3090 batteries, restricted to surface transportation only.

- Permit the optional use of previously authorized lithium battery marks during PHMSA's transitional period for these marks.
- Eliminate the requirement for accompanying documentation with mailings of lithium batteries.
- Add the new DOT class 9 hazard warning label for lithium batteries to Publication 52, Exhibit 325.1, *DOT Hazardous Materials Warning Labels: PROHIBITED IN THE MAIL*.
- Require the outer packaging of mailpieces containing small lithium batteries to be rigid and of adequate size so the handling mark can be affixed to the address side without the mark being folded.
- Require lithium battery handling marks to be placed on the address side of all mailpieces bearing these marks.
- Permit the use of padded and poly bags as outer packaging for mailpieces containing button cell batteries properly installed in the equipment they are intended to operate, provided the batteries are afforded adequate protection by the equipment and the batteries meet the USPS definition of a button cell battery in 349.11d of Publication 52.
- Define a *lithium battery consignment* as one or more mailpieces containing lithium batteries, entered into USPS networks by one mailer or mail service provider within a single mailing or retail transaction, or included in the same manifest or shipping services file, and intended for delivery to a single consignee at a single destination address.

- Require DOT-approved lithium battery markings on all mailpieces containing lithium cells or batteries contained in equipment when there are more than two mailpieces in a single consignment in domestic mail.
- Limit a single consignment to two mailpieces containing lithium batteries for international and APO/FPO/DPO mail.

These revisions will be published in the *Postal Bulletin* on August 17, 2017, but the Postal Service will provide for a transitional period until January 1, 2018. During the transitional period, mailers are urged to comply with the new mailing standards, but compliance will not be mandatory until January 1, 2018. Mailers and other interested parties can view details of these revisions in edition 22471 of the *Postal Bulletin*, to be published on August 17, 2017. The *Postal Bulletin* is available at <https://about.usps.com/postal-bulletin/pb2017.htm>.

The Postal Service will incorporate these revisions into the next online update of the Publication 52, which is available via Postal Explorer® at <http://pe.usps.com>.

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