



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

DEC 11 2019

Steve Spease
Packaging Compliance Engineer
EnerSys
2366 Bernville Rd.
Reading, PA 19605

Reference No. 19-0085

Dear Mr. Spease:

This letter is in response to your June 21, 2019, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to lithium batteries. You describe a lithium ion battery that weighs approximately 50 kg, with a completely enclosed casing with 1.5 mm thick steel walls. Five sides of the casing are welded together, and the sixth side is mechanically fastened. You state that the battery terminals will have insulators installed to protect from short circuit during transportation. You also note that the batteries will be oriented so that the terminals do not support the weight of other superimposed elements when packaged, and that spacers and strapping will be used to secure the batteries to a pallet/box to prevent shifting during transportation.

We have paraphrased and answered your questions as follows:

- Q1. You ask for confirmation that the battery packaging described above, and illustrated in the photograph you provided, would meet the requirement in § 173.185(b)(5) to have a "strong, impact-resistant outer casing."
- A1. The answer is yes. Based on the pictures and information you provided, the battery assembly appears to be fully enclosed in its metal casing. This appears to meet the requirements of a strong, impact-resistant outer casing as specified in § 173.185(b)(5).
- Q2. You ask for confirmation that the packaging would not need UN specification packaging and that securing batteries to a pallet, or in a crate/box, would meet § 173.185(b)(5) for transportation by highway or vessel.
- A2. You are correct. When all other requirements of § 173.185(b) are met in addition to using a strong and impact resistant outer casing, UN specification packaging is not required.
- Q3. You ask for confirmation that the answer provided in a letter of interpretation (LOI) Reference No. 05-0017 applies to your scenario, and that a highway or vessel shipment of the lithium batteries you described would not constitute a bulk packaging even if the total weight of the pallet exceeds 400 kg.

- A3. The answer regarding palletized batteries in LOI Reference No. 05-0017 is specific to the packaging provisions for wet batteries in § 173.159. However, lithium batteries secured to a pallet in accordance with § 173.185(b)(5) would also be considered a single non-bulk package. The palletized batteries should be marked and labeled as a non-bulk package even if the completed package weighs more than 400 kg (882 pounds).

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,



Dirk Der Kinderen
Chief, Standards Development Branch
Standards and Rulemaking Division

Casey
19-0235

Dodd, Alice (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Friday, June 21, 2019 2:55 PM
To: Hazmat Interps
Subject: FW: LETTER OF INTERPRETATION REQUEST-LITHIUM ION BATTERY PACKAGING

Hi Alice and Ikeya,

Please see the information below for a letter of interpretation request.

Thanks,

Lynsie, HMIC

From: Spease, Steven [mailto:Steven.Spease@enersys.com]
Sent: Friday, June 21, 2019 2:14 PM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Subject: RE: LETTER OF INTERPRETATION REQUEST-LITHIUM ION BATTERY PACKAGING

Lynsie
Thank you for the quick response.

Our mailing address is:
EnerSys
2366 Bernville Rd
Reading, PA
19605

Thank you,
Steve Spease
EnerSys
Packaging Compliance Engineer
610-208-1743

From: INFOCNTR (PHMSA) [mailto:INFOCNTR.INFOCNTR@dot.gov]
Sent: Friday, June 21, 2019 2:12 PM
To: Spease, Steven
Subject: RE: LETTER OF INTERPRETATION REQUEST-LITHIUM ION BATTERY PACKAGING

Dear Steve,

We have received your request for a written letter of interpretation regarding the hazardous materials regulations (49 CFR Parts 171-180). The hazardous materials regulations are available at the following URL:

<http://phmsa.dot.gov/regulations>

However, before we can submit your request for processing, please respond to this email with:

- Physical Mailing Address

Sincerely,

Lynsie, Hazardous Materials Specialist

An e-mail response from this office is considered informal guidance. Formal guidance may be requested in accordance with 49 CFR 105.20. <http://phmsa.dot.gov/hazmat/regs/interps>

From: Spease, Steven [<mailto:Steven.Spease@enersys.com>]
Sent: Friday, June 21, 2019 10:02 AM
To: PHMSA HM InfoCenter <PHMSAHMInfoCenter@dot.gov>
Subject: LETTER OF INTERPRETATION REQUEST-LITHIUM ION BATTERY PACKAGING

Dear Sir or Madam,

I am requesting a letter of interpretation on packaging of a lithium ion battery.

We have a lithium ion battery design where the battery has a mass of approximately 50kg, a casing that is approximately 450mm x 400mm x 110mm with 1.5mm thick steel walls. Five sides of the casing are welded together with the sixth side mechanically fastened.

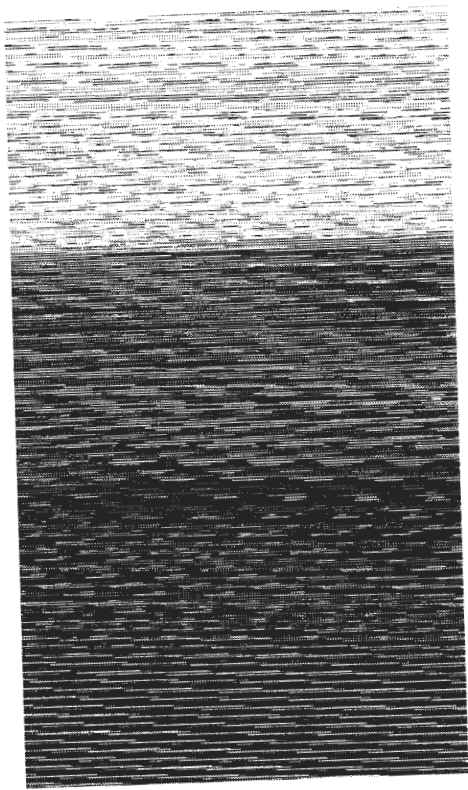
The battery terminals will have insulators installed to protect from short circuit during transportation. The batteries will be oriented so that the terminals do not support the weight of other superimposed elements when packaged.

Spacers and strapping will be used to secure the batteries to a pallet/box to prevent movement during transportation and to the protect guide pin and electronic module which are located on the outside of the casing.

Can you confirm that the battery would meet 49CFR173.185(b)(5) as having a "*strong, impact-resistant outer casing*"?

Can you confirm that the packaging would not need to use UN specification packaging and that securing batteries to a pallet, or in a crate/box would meet 49CFR173.185(b)(5) for transportation by ground or vessel?

Can you confirm that for ground and vessel shipments of these 50kg batteries they would not constitute a bulk shipment when the total weight of the pallet/box would weigh in excess of 400kg (ie more than eight, 50kg batteries per pallet/box) when packaged in accordance with 49CFR173.185(b)(5) (reference PMHSA Interpretation 05-0017)?



Thank you,
Steve Spease
EnerSys
Packaging Compliance Engineer
610-208-1743