



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

JAN 20 2015

Mr. George Kerchner
Senior Regulatory Analyst
Wiley Rein LLP
1776 K Street NW
Washington, DC 20006

Reference No. 14-0207

Dear Mr. Kerchner:

This is in response to your October 20, 2014 email requesting confirmation of the requirements for shipping lithium metal batteries contained in equipment under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180), the International Maritime Dangerous Goods (IMDG) Code, and the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI).

Your email states your product consists of a water flow meter containing two lithium metal C cells with an aggregate lithium metal content of approximately 4.5 grams. The cell and battery designs have been tested in accordance with the UN Manual of Tests and Criteria. In addition, the battery has three levels of protection in the meter; (1) the lithium metal battery is sealed; (2) the battery is placed inside the meter, and (3) the meter is packaged in a customized engineered box or crate. Finally, the meter will be placed in a strong outer packaging, packed to prevent movement within the outer packaging and accidental activation of the equipment during transport.

Your questions are paraphrased and answered as follows:

Q1. Provided the packaging, marking, labeling and documentation requirements in § 173.185(b) or § 173.185(c) and all other applicable requirements of the HMR are met, may the flow meters described above be shipped by motor vehicle, aircraft and cargo vessel within the United States?

A1. Section 173.185(c) prescribes exceptions for smaller lithium cells or batteries subject to certain conditions. Paragraph (c)(1)(ii) provides that the lithium content may not exceed 1 g for a lithium metal cell or 2 g for a lithium metal battery. Paragraph (c)(1)(iv) provides that for transportation by highway or rail only, the lithium metal content of the cell and battery may be increased to 5 g for a lithium metal cell and 25 g for a lithium metal battery. Therefore, as the water flow meter you describe contains 4.5 grams aggregate lithium content, it would be fully regulated under the HMR as a Class 9 hazardous material when transport is by aircraft or vessel, but not when transport is by motor vehicle or rail. For

transport by motor vehicle or rail, a device containing 4.5 grams aggregate lithium content may be excepted from Class 9 requirements in accordance with the exceptions in § 173.185(c).

Q2. Provided the packaging requirements in Packing Instruction (PI) 970 of the ICAO TI and all other applicable marking, labeling and documentation requirements of the ICAO TI are met, may the flow meter described above be shipped internationally by air from the United States?

A2. Yes, the flow meter containing lithium metal cells or batteries may be transported to, from or within the United States in accordance with Section I of Packing Instruction 970 as a fully regulated Class 9 hazardous material, if all or part of the transportation is by aircraft. The device would not be eligible for the exceptions provided in Section II of PI 970 as the aggregate lithium content of 4.5 grams in the flow meters exceeds 1 g for a lithium metal cell or 2 g for a lithium metal battery.

Q3. Provided the packaging requirements in PI 903 of the IMDG Code and all other applicable marking, labeling and documentation requirements of the IMDG Code are met, may the flow meter as described above be shipped internationally by cargo vessel from the United States?

A3. Yes, the flow meter containing lithium metal cells or batteries may be transported to, from or within the United States in accordance with PI 903 of the IMDG Code, if all or part of the transportation is by vessel.

I trust this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,



Shane C. Kelley
Acting International Standards Coordinator
Standards and Rulemaking Division

Wiener
§ 173.185 (b) or (c)
Batteries
14-0207

Dodd, Alice (PHMSA)

From: Ciccarone, Michael CTR (PHMSA)
Sent: Thursday, October 30, 2014 9:43 AM
To: Hazmat Interps
Subject: FW: Request for Interpretation
Attachments: WRFMAIN-#13796541-v1-USDOT_Letter_10_20_14.pdf

Shante/Alice,

Please submit this for a formal letter of interpretation.

Thanks,

Mike

From: Kerchner, George [<mailto:GKerchner@wileyrein.com>]
Sent: Wednesday, October 29, 2014 9:56 PM
To: PHMSA HM InfoCenter
Subject: Request for Interpretation

Please find attached a request for interpretation on shipping lithium metal batteries contained in equipment.

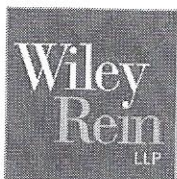
Thank you.



George A. Kerchner
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October 20, 2014

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Delivered Via Email

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Hazardous Materials Standards/Attn: PHH-10
East Building
1200 New Jersey Avenue, SE.
Washington, DC 20590-0001

Re: Request for Interpretation on Shipping Lithium Batteries
Contained in Equipment

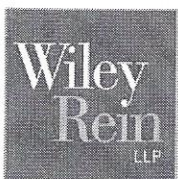
I am writing to request confirmation that a water flow meter containing a lithium metal battery as more fully described below may be shipped in accordance with the U.S. hazardous materials regulations (HMR) and international dangerous goods regulations.

The lithium metal battery in this particular flow meter contains two lithium metal C cells and has an aggregate lithium metal content of approximately 4.5 grams. The cell and battery designs have been tested in accordance with the UN Manual of Tests and Criteria. In addition, the battery has three levels of battery protection in the meter:

- i. the lithium metal battery is sealed;
- ii. the battery is placed inside the meter; and
- iii. the meter is packaged in a customized engineered box or crate.

There is no form of communication (radio or cellular) built into the flow meter. It does provide a LCD readout and interface for a separate radio or cellular device to connect to for remote communication.

The flow meter with the lithium metal battery installed will be shipped domestically and internationally by motor vehicle, aircraft and cargo vessel. The meter will be placed in a strong outer packaging constructed of suitable material of adequate strength and design to withstand conditions normally incident to transportation. In addition, the meter will be secured against movement within the outer packaging and be packed so as prevent accidental operation during transport.



October 20, 2014

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Based on the above-referenced information, please confirm the following shipping scenarios are authorized in accordance with the U.S. HMR, ICAO Technical Instructions and IMDG Code:

1. Provided the packaging, marking, labeling and documentation requirements in 49 CFR § 173.185(b) or § 173.185(c) and all other applicable requirements of the U.S. HMR are met, may the flow meter as described above be shipped by motor vehicle, aircraft and cargo vessel within the United States?
2. Provided the packaging requirements in Packing Instruction 970 of the ICAO Technical Instructions and all other applicable marking, labeling and documentation requirements of the ICAO Technical Instructions are met, may the flow meter as described above be shipped internationally by air from the United States?
3. Provided the packaging requirements in Packing Instruction P903 of the IMDG Code and all other applicable marking, labeling and documentation requirements of the IMDG Code are met, may the flow meter as described above be shipped internationally by cargo vessel from the United States?

Thank you for your assistance.

Sincerely,

A handwritten signature in dark ink that reads "George A. Kerchner".

George Kerchner
Senior Regulatory Analyst