



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

Mr. Justin Zhou
Verigo
747 SW 2nd Avenue
IMB#28, Suite 227
Gainesville, FL 32601

JUL 03 2017

Reference No. 16-0206

Dear Mr. Zhou:

This letter is in response to your December 22, 2016, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to a small lithium metal battery contained in equipment. In your email, you describe a temperature monitoring device that incorporates a single lithium metal battery that contains 0.155 grams of lithium metal. You provide information indicating that the battery meets the requirements of the United Nations (UN) Manual of Tests and Criteria and the equipment is incapable of generating sparks or a dangerous quantity of heat. Specifically, you ask if the device meets the requirements of § 173.185(c).

Under § 173.22 of the HMR, it is the shipper's responsibility to properly class a hazardous material. Such determinations are not required to be verified by this Office. However, based on the information included in your email, it is the opinion of this Office that: (1) the lithium metal cell contained in the temperature monitoring device is of the type proven to meet the criteria in part III, sub-section 38.3 of the UN Manual of Tests and Criteria as required by § 173.185(a)(1); and (2) the lithium content is less than the 1 gram per cell limit described in § 173.185(c)(1). The shipper must ensure that the battery and the device as presented for transport are adequately protected from damage, will not generate a dangerous quantity of heat or sparks and otherwise complies with all applicable requirements of the HMR.

In addition to the HMR requirements, you also must ensure compliance with all applicable FAA requirements, including those in 14 CFR § 91.21 that address operation of portable electronic devices aboard aircraft. Information and guidance to assist with compliance of this requirement can be found in Advisory Circular (AC) 91.21-1C, titled "Use of Portable Electronic Devices Aboard Aircraft." For additional information regarding the FAA requirements including any interpretation on whether your particular device meets electronic transmission requirements contained in 14 CFR § 91.21, you may contact the FAA at the following address:

Federal Aviation Administration
Office of the Chief Counsel
Regulations Division
800 Independence Avenue SW
Washington, DC 20591

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

Sincerely,

A handwritten signature in blue ink that reads "Duane A. Pfund". The signature is written in a cursive style with a large, looped initial "D".

Duane A. Pfund
International Standards Coordinator
Standards and Rulemaking Division

Goodall, Shante CTR (PHMSA)

*Kearny
173.185(c)
Lithium Cell and Battery
16-0204*

From: INFOCNTR (PHMSA)
Sent: Tuesday, December 27, 2016 3:00 PM
To: Hazmat Interps
Subject: FW: PHMSA Interpretation Response Letter for Verigo's Cargo Pod data logger

Hi Shante/Alice,

Please submit this as a letter of interpretation. Please let me know if you have any questions.

Thanks,
Eamonn

From: Justin Zhou [mailto:jzhou@verigo.io]
Sent: Thursday, December 22, 2016 6:30 PM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Cc: Adam Kinsey <akinsey@verigo.io>
Subject: PHMSA Interpretation Response Letter for Verigo's Cargo Pod data logger

To Whom It May Concern:

I recently spoke with Isaac at the Office of Hazardous Materials Help Center about obtaining an *Interpretation Response Letter* for Verigo's Pod data logger, especially with respect to [49 CFR 173.185\(c\)](#).

This letter from the PHMSA to Elpro is exactly what we are looking for: <http://www.phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=45d4a1c14191f110VgnVCM1000001ecb7898RCRD&vgnnextchannel=aa8cd3c1af814110VgnVCM1000009ed07898RCRD>

Verigo is a company based in Florida that offers a cold chain monitoring and tracking solution using wireless monitoring devices with a mobile and cloud software platform. (more details at <http://www.verigo.io/>)

We have clients all over the world, a number of whom currently use/are planning to use our monitoring devices in boxes carried via cargo airlines. One cargo shipment typically includes one small data logger which is about the size of a car remote/key fob (if you've ever seen a [FitBit](#) or [Tile](#), that's equivalent to our Pod).

Unlike other GSM/GPS/cell-enabled units on the market, our very short range Bluetooth SMART-only devices (<0.001 watt, 2.45 GHz) are inherently safe in active mode and cannot interfere with aircraft systems.

Our Pod data loggers each only contain one single-cell lithium primary battery, with lithium content of 0.155 grams - much lower than the 1 gram per cell or 2 grams of battery listed in [49 CFR 173.185\(c\)](#). The battery is contained inside our equipment at all times.

We have included a Google Drive link to a PDF packet of third party test data, UL listing, certifications, etc (~19 Mb). We can also send this document to you directly if your email client will accept that size of file. This packet also includes our strict design and production controls, and additional safety testing we have conducted to ensure there is no dangerous heat generation or catastrophic failure.

We have also included documentation that attests that our Pod data logger is safe to be on board any aircraft, esp. to [FAA AC 91.21-1C Sect. 8](#). Southwest Cargo has our Pod data loggers on their approved list of devices to be on their aircrafts ([Appendix N in document](#)).

Please let us know if there are any questions or comments, or if we need to provide any other information to proceed.

Thank you and have a happy holidays!

Best, Justin



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Justin Zhou
Verigo

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Email: jzhou@verigo.io

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