



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

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

SEP 06 2013

Mr. Lew Miller
Manager, U.S. Logistics & Warehouse
Kurt J. Lesker Company
1925 Route 51
Jefferson Hills, PA 15025

Reference No. 13-0119

Dear Mr. Miller:

This is in response to your recent e-mails and telephone conversations with a member of my staff regarding the types of packagings your company may use to package eight, round wafer disks composed of 99.9 percent "UN 1415, Lithium, Division 4.3 (dangerous when wet), PG I" by cargo-only aircraft from the United States to Germany under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) and the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions).

You state each wafer contains 0.15 kg of lithium, measures 349.8 mm x 135.9 mm x 6 mm thick, and weighs 0.149 kg (0.33 pounds). The wafers are bonded to a backing plate in a manner that prevents the wafers from touching each other and then enclosed in a metal assembly (herein referred to as the "assembly"). You also state the completed assembly is 64" L x 18" W x 8" H, is not waterproof, and weighs 120 pounds when filled and closed. You enclosed a material safety data sheet for lithium metal pieces, a schematic drawing of the backing tiles, photographs of the closed assembly, and two potential packaging options you would like validated by this Office.

The assembly you describe in your letter is not an article or device specifically listed by name in the § 172.101 Hazardous Materials Table (HMT) or the Table 3-1, Dangerous Goods List, of the ICAO Technical Instructions. Rather, it is an article containing a substance (UN1415, Lithium). Non-bulk packagings authorized by the HMR to package UN 1415, Lithium, for transportation by cargo-only aircraft must conform to the requirements prescribed in §§ 173.27, 173.211, and Special provisions A7 and N45 under § 172.102(c). In addition, the HMR permit packages offered or intended for transportation by aircraft to, through, or from the U.S. to conform to the International Civil Aviation Organization's Technical Instructions on the Transport of Dangerous Goods by Air (ICAO Technical Instructions), as limited by Subpart C of 49 CFR Part 171. Packing Instruction 487 of the ICAO Technical Instructions prescribes that your assembly containing UN 1415, Lithium, 4.3, PG I, may be packaged for

cargo-only aircraft in a UN 4D Plywood Box (your self-described Option 1) and would be declared as:

UN1415, Lithium, Division 4.3, PG I, One Plywood Box x 1.22 kg, Packing Instruction 487

The "Option 2" described in your letter, a 6HD2 plastic receptacle with outer plywood box, is also an authorized packaging method under Packing Instruction 487 of the ICAO Technical Instructions. Please note that regardless of what authorized packaging is used for the assembly, under the ICAO Technical Instructions either the individual wafers or the entire metal assembly must be hermetically sealed (e.g., by taping or threaded closures).

In your letter, you also ask where you might be able to obtain such packagings commercially in dimensions appropriate for the assembly. PHMSA does not maintain a list of packaging designs from packaging manufacturers; however, it does publish a list of commercial suppliers that includes contact information for several hazardous materials packaging manufacturers. I have enclosed a copy of this pamphlet for your convenience. It can also be found on our website at:

<http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/commsupp.pdf>. You may want to consider discussing the various packaging options provided by the HMR and the ICAO Technical Instructions with Mr. Benjamin Moore, Engineer, Engineering and Research Division, Office of Hazardous Materials Safety, at (202) 366-4545.

I trust this satisfies your request. Please contact us if we can be of further assistance.

Sincerely,



du T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Enclosure

Edmonson
§172.101
Applicability
13-0119

Edmonson, Eileen (PHMSA)

From: Lew Miller <lewm@lesker.com>
Sent: Monday, May 20, 2013 12:39 PM
To: Edmonson, Eileen (PHMSA)
Subject: RE: Test, Lithium Assembly

Hello Eileen,

I talked to you a little over a week ago related to an Assembly that our company is looking to ship and we were looking for some advice or help to see if we could ship the assembly that is rated as a DG item. Please see below for a description of the item involved, also below is the answers (in red) to some of the questions you posed to me, to get to help you and your office get an idea of what is involved with the product and the assembly. Please contact me for any questions or just anything

Thank you for help in this matter. Lew

Lew Miller | US Logistics & Warehouse Manager | Kurt J. Lesker Company | O: 412-896-8500
lewm@lesker.com | Skype: kjlc.lewm | www.lesker.com

Our company wants to ship an assembly to Germany, the assembly will include 8 individual Lithium tiles UN1415 being bonded to a copper backing plate. They are about 0.33 lbs. ea. The assembly will be shipped to Germany (Cargo Plane only) The weight and dims. of the unit is below, can you suggest a container to ship this unit in and perhaps a company to get that container from. Or any other suggestions. Please contact me if you have questions or other suggestions.

UN1415 Lithium 4.3 PG1 487 packing instructions.

Container needed(inside dims.) L 64 x 18W x 8H" Weight 120 lbs.

From: Bart Merritt
Sent: Friday, May 17, 2013 10:21 AM
To: Lew Miller
Subject: RE: Lithium Assembly

Hi Lew,

Here is the information we can provide attached and in RED below.

Thanks,
Bart

From: Lew Miller
Sent: Thursday, May 09, 2013 3:59 PM
To: Bart Merritt; Kevin Williams
Subject: Lithium Assembly
Importance: High

Gentlemen,

I am working with Eileen Edmonson with US DOT / PHMSA to come up with shipping options for the Lithium target Assembly for Applied Materials. To get an accurate evaluation she has requested some information so they can come up with a way to ship this assembly whether it may be in a standard way or maybe using a special permit. Below is some of the information needed, I wanted to run this by you so we can present this in a way they can understand and possibly help our cause. This type of assembly is out of the norm of our standard DG shipping here at KJLC so I would like to make sure we get this right and hopefully come up with an efficient, Compliant and cost sensitive way of shipping these type units. Here is the info that was requested

Name of the Lithium target manufacturer – Rockwood Lithium Inc.
Certificate of analysis of the target – Typical COA attached
MSDS - Attached
Picture of the target itself – Drawing attached

Description of the target assembly itself and its function and material involved –
LITHIUM TARGET, Li, 99.9% PURE, 1400MM X 272MM X 6MM THICK, 8-TILE CONSTRUCTION (4 x 2 ARRAY) W/ BUTT JOINTS, 0.25MM
TILE GAPS, ELASTOMER BONDED TO CUSTOMER SUPPLIED TITANIUM BACKING PLATE

Picture of the assembly - Attached

In our conversation she presented some possible vague options but will need some specifics for her team to come up with a viable option

Sorry for the delay but I would like to get this right

Let me know

Thanks
Lew

Lew Miller | US Logistics & Warehouse Manager | Kurt J. Lesker Company | O: 412-896-8500
lewm@lesker.com | Skype: kjlc.lewm | www.lesker.com

From: eileen.edmonson@dot.gov [mailto:eileen.edmonson@dot.gov]
Sent: Thursday, May 09, 2013 2:59 PM
To: Lew Miller
Subject: Test

Here is the test e-mail you requested.

Eileen Edmonson
USDOT/PHMSA
202-366-4481 (w)
202-366-7041 (fax)
eileen.edmonson@dot.gov (e-mail)
www.phmsa.dot.gov/hazmat/regulations
www.dot.gov

-----Original Message-----

From: Matthew Evanovich - Dangerous Goods [mailto:matthew.evanovich@berlinpackaging.com]
Sent: Tuesday, May 07, 2013 2:54 PM
To: Lew Miller
Subject: RE: Contact information

Hi Lew,

After discussing with the testing facility, we are not able to ship this via air as a complete assembly. Please see CFR Reference below:

- Under 172.101(j)(3) it spells this out by stating: When articles or devices are specifically listed by name, the net quantity limitation applies to the entire article or device (less packaging and packaging materials) rather than only to its hazardous components.

It appears the only option is to ship by land or sea. If you would like us to look into building something that is custom we could certainly look into it. We do not have any primary containers that are large enough to fit the total assembly. Please advise how you would like us to continue.

Best regards,

Matt Evanovich
Packaging Consultant

Anything is Possible!
America's only Hybrid Packaging Supplier

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BerlinPackaging.com
Studio111Design.com
BerlinDangerousGoods.com

[View my Profile and vCard](#)

-----Original Message-----

From: Lew Miller [mailto:lewm@lesker.com]
Sent: Tuesday, May 07, 2013 10:36 AM
To: Matthew Evanovich - Dangerous Goods
Subject: RE: Contact information

I thought that is the DG item itself (15 kg of Lithium), the Lithium total is nowhere near 15 kg total in the container