



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

AUG 12 2011

Mr. Jonathan Epstein
Holland & Knight LLP
2099 Pennsylvania Ave, N.W.
Suite 100
Washington, DC 20006

Ref. No.: 11-0150

Dear Mr. Epstein:

This responds to your June 20, 2011 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to battery-powered equipment and lithium batteries.

In your letter, you state that your client, Toro Company (Toro), has designed a new product that is a commercial grade self-propelled walk behind mower designed to be used on golf courses. You state that the mower (a.k.a., eFlex) is powered by a 58 volt lithium-ion battery pack that is semi-permanently affixed to the eFlex chassis and would not normally be removed except for maintenance. You also state that the battery pack is affixed securely in a battery holder and protected in a manner to prevent short circuit or damage and housed within a glass filled nylon protective enclosure that is vented to allow dissipation of heat. You further state that the lithium batteries have been tested to meet UN test criteria as prescribed in the HMR under § 173.185. Finally, you provide an attachment of the specifications of the eFlex mower with your letter. Your questions are paraphrased and answered below.

Q1: You ask whether the eFlex mower is properly classified as “UN3171, Battery-powered equipment” instead of “UN3091, Lithium batteries, contained in equipment?”

A1: In accordance with § 173.22, it is the shipper's responsibility to properly classify and describe a hazardous material. This Office does not perform that function. However, when reviewing the specifications of the eFlex mower you provided, the answer is yes. In addition, for “UN3171, Battery-powered equipment,” Special Provision 134 in § 172.202 states that “this entry only applies to vehicles, machinery and equipment powered by wet batteries, sodium batteries, or lithium batteries that are transported with these batteries installed. Examples of such items are electrically-powered cars, lawn mowers, wheelchairs, and other mobility aids.” UN3171 is a proper

classification for the eFlex mower as it is a battery-powered piece of mechanized equipment that would normally be powered by an internal combustion engine.

Q2: You ask whether the eFlex mower containing an installed lithium ion battery pack can be shipped by ground in the U.S. in accordance with the exceptions provided in § 173.220?

A2: The answer is yes. Provided a shipment of eFlex mowers comply with the requirements in § 173.220, a shipper would be able to utilize the appropriate exceptions (such as § 173.220(h)(1)).

Q3: You ask whether the eFlex mower can be shipped by vessel as “UN3171, Battery-powered equipment” under the International Maritime Dangerous Goods (IMDG) Code?

A3: The answer is yes. As specified in § 171.25(b)(4), any person who offers for transportation or transports a hazardous material consigned under “UN3166” and “UN3171” may be prepared in accordance with the IMDG Code or this subchapter.

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

Sincerely,

A handwritten signature in black ink, appearing to read "T. Glenn Foster". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

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

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Nickels
\$173.220
\$173.185
Batteries
11-0150

June 20, 2011

VIA: UPS

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

Re: Request for Interpretation - eFLEX Self-Propelled Commercial Mower Powered by a
Lithium Ion Battery under HMR and IMDG Code

Dear Sir/Madam:

On behalf of the Toro Company ("Toro"), we hereby submit this request for clarification of the classification and shipping requirements for the Toro eFLEX Lithium Ion battery-powered mower, pursuant to 49 C.F.R. § 105.20 of the Hazardous Materials Regulations ("HMR").

Based on our review of the applicable regulations and discussion with a Pipeline and Hazardous Materials Agency ("PHMSA") official,¹ we believe that the eFLEX is classifiable as "Battery-Powered Equipment (UN 3171)" and not as "Lithium Batteries, contained in equipment (UN 3091)." However, in order to avoid future confusion by logistics providers, we request this clarification.

A. Description of eFLEX

The eFlex is a new product designed by Toro which will soon be in production. It is a commercial grade self-propelled walk behind mower designed to be used on golf courses. It is powered by a 58 Volt Lithium-Ion battery pack that is semi-permanently affixed to the eFLEX chassis and would not normally be removed except for maintenance. The battery pack is affixed

¹ Conference of Feb. 7, 2011, between Jonathan M. Epstein, Holland & Knight, and Kevin Leary, PHMSA.

securely in a battery holder and protected in a manner to prevent short circuit or damage and housed within a glass filled nylon protective enclosure that is vented to allow dissipation of heat. The lithium batteries have been tested to and met UN test criteria as prescribed in HMR § 173.185. See attached specifications at Enclosure A.

B. Specific Questions

1. Is the eFLEX properly classifiable as "Battery-Powered Equipment (UN 3171)" rather than as "Lithium Batteries, contained in equipment (UN 3091)"?

The HMR table entry for Battery-Powered Equipment (UN 3171) calls out for the use of special packing instructions HMR § 173.220 which applies to "[a]n internal combustion engine, self propelled vehicle, mechanized equipment containing an internal combustion engine, a battery powered vehicle or equipment . . . when transported as cargo" This table entry also references special provision 134 (HMR § 173.102(c)), which states:

This entry only applies to vehicles, machinery and equipment powered by wet batteries, sodium batteries, or lithium batteries that are transported with these batteries installed. Examples of such items are electrically-powered cars, lawn mowers, wheelchairs, and other mobility aids. . . .

Hence, UN 3171 would appear to be the proper classification for the eFLEX, a battery-powered piece of mechanized equipment that would otherwise normally be powered by an internal combustion engine. We understand that the classification Lithium Batteries contained in equipment is not intended to apply to lithium battery-powered machinery, but rather to lithium battery-powered electronics such as laptop computers. There are several interpretations by PHMSA on point. In 2009, PHMSA found that the lithium battery-powered floor scrubber was classified under UN 3171, and that it should be packed under HMR § 173.220 rather than HMR § 173.185.² There is a similar ruling with respect to the lithium-powered Segway.³

2. May the eFLEX mower containing installed lithium ion battery pack be shipped by ground in the United States in accordance with HMR exception § 173.220?

If the eFLEX is classifiable under UN 3171, we presume that, if it meets the technical criteria for shipment under HMR §173.220, it may be shipped under that provision and exempt from other provisions of the HMR for shipment by ground in accordance with HMR § 173.220(g)(1).

² PHMSA Interpretation No. 09-0197.

³ PHMSA Interpretation No. 05-0076.

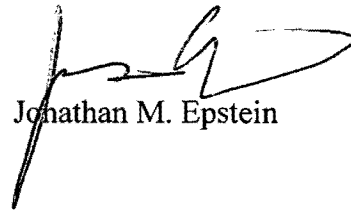
3. If Shipped by Sea, the eFlex would be classified as "Battery-Powered Equipment" (UN 3171) under the International Maritime Dangerous Goods ("IMDG") Code and shipped according to the requirements set forth in the IMDG?

We understand that the IMDG can now be used for shipping items under UN 3171. On January 19, 2011, PHMSA published a final rule harmonizing certain HMR provisions, *inter alia*, with the IMDG.⁴ This rule added to HMR § 171.25 (Additional Requirements for the use of the IMDG code) a new sub-section (b)(4) that states: "*Materials consigned under UN 3166 and UN 3171 (e.g., engines, internal combustion, etc., and Battery-powered equipment) may be prepared in accordance with the IMDG Code or this Subchapter.*" This Rule goes into effect January 1, 2012, but voluntary compliance is allowed beginning January 1, 2011. We note that similar to the HMR, the IMDG Code's Special Provision 240 states that examples of battery-powered equipment include "lawnmowers."

If you have any questions or require additional information, please do not hesitate to contact me at (202) 828-1870, or by e-mail at jonathan.epstein@hklaw.com.

Sincerely yours,

HOLLAND & KNIGHT LLP



Jonathan M. Epstein

Enclosure:

A. Specifications of eFlex

⁴ PHMSA Final Rule, *Hazardous Materials: Harmonization with the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization Technical Instructions for the Safe Transportation of Dangerous Goods by Air*, 76 Fed. Reg. 3308 (Jan. 19, 2011).