



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

August 17, 2020

Aijaz A. Khan
Transportation Supervisor, Commercial Operations
Fisher BioServices
14665 Rothgeb Drive
Rockville, MD 20850

Reference No. 20-0050

Dear Mr. Khan:

This letter is in response to your June 30, 2020, email and subsequent phone conversation requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to cryogenic liquids. Specifically, you ask for clarification regarding the use of the exceptions for cryogenic liquids as provided in § 173.320 and provide a description of a liquid nitrogen refrigeration system used to maintain the temperature of materials being transported by motor vehicle. You state that the refrigeration system consists of five Dewar flasks filled with liquid nitrogen permanently attached to the transport vehicle and the flasks are equipped with pressure release valves that maintain a pressure of less than 25 psig.

We have paraphrased and answered your questions as follows:

- Q1. You ask whether placards are required on a company vehicle that transports the liquid nitrogen refrigeration system.
- A1. The answer is no. Cryogenic liquids transported by motor vehicle, as described in your scenario, are eligible for relief from the HMR, as provided in § 173.320. The exceptions contained in § 173.320 are applicable to the transportation by motor vehicle of cryogenic liquids in Dewar flasks designed and constructed so that the pressure in such packagings will not exceed 25.3 psig under ambient temperature conditions during transportation. Section 173.320(b) further provides that the requirements of the HMR do not apply to atmospheric gases (see § 171.8) and helium when used in operation of a process system, such as a refrigeration system. Therefore, the display of placards on the transport vehicle is not required.

Q2. You ask whether a vehicle operator must have a hazardous material (hazmat) endorsement on a Commercial Driver's License (CDL) when transporting the liquid nitrogen refrigeration system.

A2. The answer is no. The Federal Motor Carrier Safety Administration, the Agency responsible for issuing the licensing standards for commercial motor vehicle drivers in 49 CFR part 383, requires a driver who transports hazardous material shipments to obtain a hazmat endorsement on a CDL. However, the requirement for a hazmat endorsement only applies to shipments for which a placard is required under the HMR or any quantity of a material listed as a select agent or toxin in 42 CFR Part 73. Because the refrigeration system is excepted from the placarding requirements prescribed in part 172, subpart F of the HMR, a hazmat endorsement on a CDL is not required.

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



June 30, 2020

Fisher BioServices
14665 Rothgeb Drive
Rockville, MD 20850
DOT# 1490455

Hello,

I would like to request a written letter of interpretation concerning the applicability of 49 CFR § 173.320 (Cryogenic liquids; exceptions) to a liquid nitrogen-based refrigeration system designed and permanently fixed on 3 axle Freightliner with GVW of 55,000 lbs 26-foot box CDL truck. The liquid nitrogen system is used to maintain, and cool temperature of material or product being transported by the truck.

The refrigerated system consists of 5 LN2 Dewars that contain the In2 inside of the Dewar. See details on Dewars below. The Dewars are permanently attached to the truck and can be moved. The combined In2 capacity of all the Dewars is more than 1000 liters. These Deawars have a pressure release valve and maintain a PSI of less than 25PSI.

Are we required to Placard our vehicle or are exempt from Placarding and Hazmat Regulation?

Are we exempt from requiring our drivers to maintain a HAZMAT CDL license?

Three Taylor -Wharthon

240 liters

MODEL NO. XL240PB
PART NO. L240-0C06
TC4LM
DOT 4L

TWO Taylor -Wharthon

160 liters

MODEL NO. XL-160
PART NO. L160-0C03
TC4LM
DOT 4L

Regards,
Aijaz Khan

A handwritten signature in black ink, appearing to read 'Aijaz Khan', written over a vertical line.

Aijaz A. Khan

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