



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

May 25, 2023

Mr. Jared Sharp  
Senior Manager, Transportation Safety  
Crestwood Transportation  
1709 South Burlington Road  
Bridgeton, NJ 08302

Reference No. 22-0078

Dear Mr. Sharp:

This letter is in response to your August 2, 2022, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the loading of liquefied petroleum gas (LPG) in Department of Transportation specification MC 331 cargo tanks.

We have paraphrased and answered your questions as follows:

- Q1. You ask whether a cargo tank is considered to be “overfilled” if the liquid level gauge is greater than 90% when loading it in accordance with the specific gravity chart provided in § 173.315(b).
- A1. When loading a cargo tank motor vehicle (CTMV) with LPG, fillers must follow the requirements of § 173.315(b). This section instructs fillers to load CTMVs by weight based on the capacity of the tanks and the specific gravity of the LPG. When filling the CTMV by volume, the same amount of material is permitted, unless the filler is using a fixed length dip tube or other fixed maximum liquid level indicators, in which case the CTMV may only be filled to 97% of the maximum permitted filling density by weight. Factors such as the temperature may cause fluctuations in the volume reading on a CTMV; however, this is not an upper fill limit of 90%. Provided the filling requirements of § 173.315(b) and the outage requirements of § 173.24b(a) are met, a liquid level gauge may read more than 90% and still be in compliance.
- Q2. When using the specific gravity chart provided in § 173.315(b), you ask whether it is permissible to revise your specific gravity values to reflect the current temperature of an LPG product if it is warmer than 60 degrees Fahrenheit.

- A2. The answer is no. The table lists the maximum permitted filling density as a percentage of water-weight capacity based on the specific gravity of LPG at 60 degrees Fahrenheit. Since temperature has a direct relation to volume, the regulations are set to this specific temperature and adjustments are not permitted.
- Q3. You ask whether the requirement specified in § 173.24b(a)—that the outage is at least 1% of the total capacity of the cargo tank—applies to LPG.
- A3. The answer is yes. Section 173.24b(a) states that “[e]xcept as otherwise provided in this subchapter, liquids and liquefied gases must be so loaded that the outage is at least five percent for materials poisonous by inhalation, or at least one percent for all other materials, of the total capacity of a cargo tank, portable tank, tank car (including dome capacity), multi-unit tank car tank, or any compartment thereof....” Section 173.315(b) does not provide relief from the outage requirements of § 173.24b(a).

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 "T. Glenn Foster". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

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

**From:** [INFOCNTR \(PHMSA\)](#)  
**To:** [Dodd, Alice \(PHMSA\)](#); [Hazmat Interps](#)  
**Subject:** FW: Request for Letter of Interpretation 49 C.F.R. 173.315 and 49 C.F.R 173.24b  
**Date:** Monday, August 8, 2022 2:35:34 PM  
**Attachments:** [image002.png](#)

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Dear Alice and team,  
Please see below the request for a letter of interpretation.  
Thank you,  
Rachel (HMIC)

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**From:** Sharp, Jared <Jared.Sharp@crestwoodlp.com>  
**Sent:** Tuesday, August 2, 2022 1:15 PM  
**To:** INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>  
**Subject:** Request for Letter of Interpretation 49 C.F.R. 173.315 and 49 C.F.R 173.24b

**CAUTION:** This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern:

I am looking for some clarification of §173.315(b) and §173.24b that do not appear to be answered in previous guidance offered by the Pipeline & Hazardous Material Safety Administration.

**Background of our company and daily operations**

Crestwood is a transportation company that specializes in the transport of Liquefied Petroleum Gasses in MC331 Cargo Tanks. When loading our transport vessels we are utilizing the Magnetel liquid level gauge to determine the percentage of liquid in the cargo tank. In the summer months with warmer atmospheric temperatures, we experience higher pressures when loading our transports and will have to adjust our loading calculation from 60 degrees F to the current temperature of the product. In doing the adjustments our transports may tend to show greater than 90% liquid capacity on the Magnetel gauge.

Historically when speaking to enforcement officers on the roadside we have been instructed that our vessels should not be loaded greater than 90% liquid capacity at any time. If stopped roadside and the liquid level gauge was found to show greater than 90% then we would be considered to have an overfilled cargo tank. We have instructed our drivers not to load their transport vessels over 90% based on this guidance.

I have three questions regarding the loading of cargo tanks with liquefied petroleum gasses:

1. In loading a cargo tank according to the specific gravity chart, if the liquid level gauge is above 90% is the cargo tank considered overfilled?
2. When utilizing the specific gravity chart in the regulation to obtain the maximum permitted

filling density, a product (over 1200 gallons) with specific gravity from 0.504-0.510 is permitted to load 45% of the water-weight capacity of the tank at 60 degrees F. Can we correct this number determined at 60 degrees to reflect the current temperature of the liquefied petroleum gas if the product is warmer than 60 degrees F?

3. §173.24b(a) Outage and filling limits- Does the outage requirement of 1% of the total capacity of the cargo tank for all other materials apply to Liquefied Petroleum Gases and the MC 331 transport vessel?

Any assistance you can provide in helping me understand these regulations in the context of the above stated questions is greatly appreciated. If you need any further information to respond, feel free to contact me.

Sincerely,

**Jared Sharp**

Senior Manager, Transportation Safety

**Crestwood Transportation**

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