



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

AUG 07 2019

Collin B. Mooney, MPA, CAE
Executive Director
Commercial Vehicle Safety Alliance
6303 Ivy Lane, Suite 310
Greenbelt, MD 20770-6319

Reference No. 18-0154

Dear Mr. Mooney,

This letter is in response to your December 4, 2018, emails and letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the requalification testing of cargo tanks. Specifically, you ask four questions concerning the 10-year internal visual inspection and the 10-year pressure test required for MC 331 cargo tanks in dedicated propane service prescribed in § 180.407(c).

We have paraphrased and answered your questions as follows:

- Q1. You ask whether the 10-year internal visual inspection and pressure retest intervals in the § 180.407(c) Table only apply to MC 331 bobtail tank trucks (i.e., the cargo tank is permanently mounted on a truck chassis), with a capacity less than 3,500 gallons in dedicated propane service, or if they also apply to MC 331 cargo tanks mounted on trailers.
- A1. The 10-year retest exception in § 180.407(c) applies to all MC 331 cargo tanks of 3,500 gallons or less, constructed of the specified non-quenched and tempered (NQT) steel(s), and used in dedicated propane service. In addition, the 10-year retest requirement applies to all MC 331 cargo tanks meeting the exception whether the cargo tank is permanently mounted on a truck chassis, trailer, or other structure.
- Q2. You ask whether a motor carrier may fill a cargo tank with “UN1978, Propane, 2.1 (flammable gas)” and use the exception provided in § 172.102(c)(1), Special Provision 19, to qualify the cargo tank for the 10-year pressure retest and internal visual inspection.
- A2. Provided the cargo tank is in dedicated propane service, the answer is yes. Special Provision 19 permits the identification number “UN1075” to be used in place of the identification number specified for the hazardous material in column 4 of the § 172.101 Hazardous Materials Table (HMT) (e.g., “1978”). Further, when one proper shipping name entry in column 2 of the HMT references another entry by use of the word “see,”

any entry in Roman type that follows may be used as the proper shipping name for that hazardous material (e.g., Propane, *see* Petroleum gases, liquefied *or* Liquefied petroleum gas). Thus, propane may be described as “UN1978, Propane,” “UN1075, Propane,” “UN1075, Petroleum gases, liquefied,” or “UN1075, Liquefied petroleum gas.”

Please note the 10-year pressure retest exception does not apply to other gases with Special Provision 19 assigned to them in column 7 of the HMT (e.g., Butane or Propylene). Special Provision 19 requires that the identification number “1075” be used consistently in all places the identification number appears (e.g., shipping papers, package marking, and/or emergency response information).

- Q3. You ask whether the product must be 100 percent propane, or if it can be described as propane and be a mix of propane and other liquefied petroleum gases if propane is the primary gas in the mixture and the material is shipped as propane, consistent with industry standards.
- A3. The propane transported does not need to be 100 percent pure propane to meet the requirements of the 10-year retest exception. The propane may be in a gas mixture provided the proper shipping name is “Propane” when not using one of the alternate proper shipping names or identification number permitted under Special Provision 19.
- Q4. You ask whether carriers must keep a copy of the full-size equivalent (FSE) Charpy V-notch (CVN) energy test data required for cargo tanks in dedicated propane service, made of the required NQT steel(s), in the vehicle to take advantage of the 10-year retest in § 180.407(c).
- A4. The answer is no; the HMR do not require carriers to maintain a copy of the test data on the transport vehicle. The HMR do not specify, or limit, the location(s) where such test data may be kept. However, in accordance with § 180.417(b)(3) of the HMR, each owner of a cargo tank and, except for a motor carrier who leases a cargo tank for less than 30 days, each motor carrier who uses a cargo tank must retain copies of the test data to be eligible for the 10-year retest in § 180.407(c). In other words, if the cargo tank owner and motor carrier, when the cargo tank is leased for 30 days or more, does not retain a copy of the test report, the cargo tank must be retested every 5 years in accordance with § 180.407(c).

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

Sincerely,



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

Edmondson

18-0154

Dodd, Alice (PHMSA)

From: DerKinderen, Dirk (PHMSA)
Sent: Tuesday, December 04, 2018 11:53 AM
To: January, Ikeya CTR (PHMSA); Dodd, Alice (PHMSA)
Subject: FW: PHMSA 10-Year Test and Inspection Interpretation Request
Attachments: PHMSA 10-Year Test and Inspection Interpretation Request.pdf

Please enter into the interp database and assign.

From: collinm cvsa.org
Sent: Tuesday, December 04, 2018 11:10 AM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>; Kelley, Shane (PHMSA) <shane.kelley@dot.gov>
Cc: Mitchell, Aaron (PHMSA) <aaron.mitchell@dot.gov>; DerKinderen, Dirk (PHMSA) <Dirk.DerKinderen@dot.gov>; adrienneg cvsa.org <adrienneg@cvsa.org>
Subject: PHMSA 10-Year Test and Inspection Interpretation Request

Sorry folks, resending with corrected emails and with the attached interpretation request.

Thank you.

Collin
Direct: 301-830-6149
Main: 301-830-6143
Mobile: 703-407-3223

From: Collin Mooney
Sent: Tuesday, December 4, 2018 11:07 AM
To: infocntr@dot.gov; shane.kelley@dot.gov
Cc: aaron.mitchell@dot.gov; Dirk.DerKinderen@dot.gov; Adrienne Gildea <adrienneg@cvsa.org>
Subject: PHMSA 10-Year Test and Inspection Interpretation Request

Good morning everyone,

The Commercial Vehicle Safety Alliance (CVSA) requests an interpretation pertaining to the 10-year Internal Visual Inspection and the 10-year Pressure Test on MC331 cargo tanks in dedicated propane service. The attached letter outlines our request, which includes a PDF of a PowerPoint presentation in order to provide some additional background information on this issue.

CVSA works to closely monitor, evaluate and identify potentially unsafe transportation processes and procedures as well as to help facilitate and implement best practices for enhancing safety on our highways. Commercial motor vehicle safety continues to be a challenge and we need the involvement of all affected parties to help us better understand these issues and put into place practical solutions. We appreciate the agency's commitment to safety and stakeholder involvement.

Thank you.

Collin B. Mooney, MPA, CAE
Executive Director
Commercial Vehicle Safety Alliance

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Commercial Vehicle Safety Alliance

Improving uniformity in commercial motor vehicle safety and enforcement

December 4, 2018

Shane Kelley
Director
Standards and Rulemaking (PHH-10)
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Mr. Kelley,

The Commercial Vehicle Safety Alliance (CVSA) requests an interpretation on the four questions listed below pertaining to the 10-year Internal Visual Inspection and the 10-year Pressure Test on MC331 cargo tanks in dedicated propane service. The issue was discussed at the recently completed CVSA 2018 Annual Conference and Exhibition in Kansas City, Missouri.

CVSA is a nonprofit association comprised of local, state, provincial, territorial and federal commercial motor vehicle safety officials and industry representatives. The Alliance aims to achieve uniformity, compatibility and reciprocity of commercial motor vehicle inspections and enforcement by certified inspectors dedicated to driver and vehicle safety. Our mission is to improve commercial motor vehicle safety and uniformity throughout Canada, Mexico and the United States, by providing guidance and education to enforcement, industry and policy makers.

On June 2, 2016, the Pipeline and Hazardous Materials Safety Administration (PHMSA) published the HM-218H Final Rule. One of the rule changes allowed certain cargo tanks, made of NQT steel that were less than 3500 gallons, to extend the internal visual inspection and pressure test intervals to 10 years. Later, on June 18, 2018, PHMSA published a correction and amendment to the HM-218H Final Rule, clarifying and amending some of the regulatory language applicable to the 10-year internal visual inspection and pressure test. This rulemaking was the result of a petition for rulemaking from the National Propane Gas Association (NPGA). The NPGA petition was the result of a study completed by Battelle on behalf of NPGA.

After reviewing the NPGA petition, Battelle study, HM-215H final rule and HM-215H correction and amendment document, the CVSA Hazardous Materials Committee determined that the following questions must be addressed, so this rule can be enforced and complied with in a consistent manner.

- 1) The regulations only refer to cargo tanks. Is the intent for this to apply only to bobtails or can it also apply to trailers?
- 2) Can a motor carrier load a cargo tank with propane and use special provision 19, which would allow the proper shipping name to be Petroleum Gases Liquefied or Liquefied Petroleum Gas and still qualify for the 10-year pressure test and internal visual inspection?
- 3) Does the product have to be 100 percent propane, or can it be classed as propane and be a mix of propane and other liquefied petroleum gases if propane is the primary gas in the mixture and the material is shipped as propane, consistent with the industry standard?
- 4) Are carriers required to keep a copy in the vehicle of the full-size equivalent (FSE) Charpy V-notch (CVN) energy test data required for cargo tanks in dedicated propane service made of NQT SA-202 and NQT SA-455 steel, per Note 5 in § 180.407?

The attached pdf document is from a PowerPoint presentation given to our Hazardous Materials Committee at our 2018 Annual Conference and Exhibition in Kansas City, Missouri. This information provides some additional background information on this issue.

CVSA works to closely monitor, evaluate and identify potentially unsafe transportation processes and procedures as well as to help facilitate and implement best practices for enhancing safety on our highways. Commercial motor vehicle safety continues to be a challenge and we need the involvement of all affected parties to help us better understand these issues and put into place practical solutions. We appreciate the agency's commitment to safety and stakeholder involvement.

If you have further questions or comments, please do not hesitate to contact me by phone at 301-830-6149 or by email at collinm@cvsa.org.

Respectfully,



Collin B. Mooney, MPA, CAE
Executive Director
Commercial Vehicle Safety Alliance

Cc: Aaron Mitchell
Dirk DerKinderen



MC-331 Cargo Tanks

10 year Internal Visual Inspection
and Pressure Test



10 Test & Inspections for MC 331s

Background

HM-218H published 6/2/16

- Contained provisions for 10 year internal visual inspection and pressure test on certain cargo tanks in dedicated propane service.

HM-218H Corrections and Amendments published on 6/18/18

- Clarified the 10 year test and inspections by correcting and amending some of the regulatory language.



10 Test & Inspections for MC 331s

Background

- In 2001, NPGA conducted a survey on whether any failures occurred on tanks with 5 year pressure test. None on tanks < 3500 gallons water capacity (bobtails).
- NPGA retained Battelle to do a study on the concept of extending the inspection period of cargo tanks with the following limitations:
 - constructed to specification MC 330 or MC 331
 - constructed with non-quenched and tempered steel
 - with a capacity of less than 3500 gallons
 - in dedicated propane service

10 Test & Inspections for MC 331s



Background

- Battelle conducted a two phase study.
- Battelle published the final report in September 2011.
- The study supported making changes to regulations with specific parameters.



10 Test & Inspections for MC 331s

Background

Battelle recommended changing the regulations with the following parameters.

- In dedicated propane service
- Sized less than 3500 gallons water capacity
- Meeting DOT MC-331 specifications
- Constructed of one or more of the following materials:
 - Non-quenched and tempered (NQT) SA-612 steel
 - Non-quenched and tempered (NQT) SA-202 or SA-455 steels, provided the materials have full-size equivalent (FSE) Charpy-vee notch (CVN) energy test data that demonstrate 75% shear-area ductility at 32F with an average of three or more samples greater than 15 ft-lb FSE, with none less than 10 ft-lb FSE.



10 Test & Inspections for MC 331s

Background

On January 3, 2012, NPGA petitioned PHMSA to make changes to the regulations.

- Bobtails making propane deliveries to the end user.
- Not highway transports, which make deliveries to bulk facilities.
- Mentions no trailers.
- Makes the same recommendations to PHMSA as the final Battelle report.



10 Test & Inspections for MC 331s

Background

NPGA petition letter recommendations.

- This study supports NPGA's recommendation to extend the requalification period from 5 years to 10 years for MC-331 specification cargo tanks that meet the following requirements:
- Used in dedicated propane service;
- Have a water capacity less than 3,500 gallons; and
- Constructed of one or more of the following materials:
 - Non-quenched and tempered (NQT) SA-612 steel;
 - Non-quenched and tempered (NQT) SA-202 or SA-455 steels, provided the materials have full-size equivalent (FSE) Charpy-vee notch (CVN) energy test data that demonstrate 75% shear-area ductility at 32 degrees F with an average of three or more samples greater than 15 ft-lb FSE, with none less than 10 ft-lb FSE.



10 Test & Inspections for MC 331s



Background

Final Rule language

- The NPGA submitted a petition (P-1604) requesting that PHMSA modify the pressure test and visual inspection test requirements applicable to certain MC 331 specification cargo tanks in dedicated propane delivery service, commonly known as bobtails, found in § 180.407(c).



10 Test & Inspections for MC 331s

Background

Final Rule language continued

- Based on the results of this study, the NPGA and Battelle recommend that PHMSA modify the requalification period from five years to ten years for MC 331 cargo tanks that: (1) Are used in dedicated propane service; (2) have a water capacity less than 3,500 gallons; and (3) are constructed of non-quenched and tempered (NQT) SA-612 steel and NQT SA-202 or SA-455 steels, provided the materials have full-size equivalent (FSE) Charpy Vee notch energy test data that demonstrates 75 percent shear-area ductility at 32 °F with an average of three (3) or more samples greater than 15 ft-lb FSE none with less than 10 ft-lb FSE.



10 Test & Inspections for MC 331s

Final rule corrected language in §180.407

COMPLIANCE DATES—INSPECTIONS AND TEST UNDER § 180.407(c)

Test or inspection (cargo tank specification, configuration, and service)	Date by which first test must be completed (see Note 1)	Interval period after first test
External Visual Inspection:		
All cargo tanks designed to be loaded by vacuum with full opening rear heads	September 1, 1991	6 months
All other cargo tanks	September 1, 1991	1 year.
Internal Visual Inspection:		
All insulated cargo tanks, except MC 330, MC 331, MC 338 (see Note 4)	September 1, 1991	1 year.
All cargo tanks transporting lading corrosive to the tank	September 1, 1991	1 year.
MC 331 cargo tanks less than 3,500 gallons water capacity in dedicated propane service constructed of nonquenched and tempered NQT SA-612 steel (see Note 5).	September 1, 1991	10 years
All other cargo tanks, except MC 338	September 1, 1995	5 years.
Lining Inspection:		
All lined cargo tanks transporting lading corrosive to the tank	September 1, 1991	1 year.
Leakage Test:		
MC 330 and MC 331 cargo tanks in chlorine service	September 1, 1991	2 years.
All other cargo tanks except MC 338	September 1, 1991	1 year.
Pressure Test:		
(Hydrostatic or pneumatic) (See Notes 2 and 3)		
All cargo tanks which are insulated with no manhole or insulated and lined, except MC 338	September 1, 1991	1 year
All cargo tanks designed to be loaded by vacuum with full opening rear heads	September 1, 1992	2 years.
MC 330 and MC 331 cargo tanks in chlorine service	September 1, 1992	2 years.
MC 331 cargo tanks less than 3,500 gallons water capacity in dedicated propane service constructed of nonquenched and tempered NQT SA-612 steel (See Note 5).	September 1, 1992	10 years.
All other cargo tanks	September 1, 1995	5 years.
Thickness Test:		
All unlined cargo tanks transporting material corrosive to the tank, except MC 338	September 1, 1992	2 years.

MC 331 cargo tanks

Note 1: If a cargo tank is subject to an applicable inspection or test requirement under the regulations in effect on December 30, 1990, and the due date (as specified by a requirement in effect on December 30, 1990) for completing the required inspection or test occurs before the compliance date listed in table 1, the earlier date applies.

Note 2: Pressure testing is not required for MC 330 or MC 331 cargo tanks in dedicated sodium metal service.

Note 3: Pressure testing is not required for uninsulated lined cargo tanks, with a design pressure MAWP 15 psig or less, which receive an external visual inspection and lining inspection at least once each year.

Note 4: Insulated cargo tanks equipped with manholes or inspection openings may perform either an internal visual inspection in conjunction with the external visual inspection or a hydrostatic or pneumatic pressure-test of the cargo tank.

Note 5: A 10-year inspection interval period also applies to cargo tanks constructed of NQT SA-202 or NQT SA-455 steel provided the materials have full-size equivalent (FSE) Charpy vee notch (CVN) energy test data that demonstrated 75% shear-area ductility at 32 °F with an average of 3 or more samples >15 ft-lb FSE with no sample <10 ft-lb FSE.



10 Test & Inspections for MC 331s

Final rule corrected language in §180.407

COMPLIANCE DATES—INSPECTIONS AND TEST UNDER § 180.407(c)

Test or inspection (cargo tank specification, configuration, and service)	Date by which first test must be completed (see Note 1)	Interval period after first test
External Visual Inspection:		
All cargo tanks designed to be loaded by vacuum with full opening rear heads	September 1, 1991	6 months
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Internal Visual Inspection:		
All insulated cargo tanks, except MC 330, MC 331, MC 338 (see Note 4)	September 1, 1991	1 year
All cargo tanks transporting lading corrosive to the tank	September 1, 1991	1 year
MC 331 cargo tanks less than 3,500 gallons water capacity in dedicated propane service constructed of nonquenched and tempered NQT SA-612 steel (see Note 5)	September 1, 1995	10 years
All other cargo tanks, except MC 338	September 1, 1995	5 years
Lining Inspection:		
All lined cargo tanks transporting lading corrosive to the tank	September 1, 1991	1 year
Leakage Test:		
MC 330 and MC 331 cargo tanks in chlorine service	September 1, 1991	2 years
All other cargo tanks except MC 338	September 1, 1991	1 year
Pressure Test:		
(Hydrostatic or pneumatic) (See Notes 2 and 3)		
All cargo tanks which are insulated with no manhole or insulated and lined, except MC 338	September 1, 1991	1 year
All cargo tanks designed to be loaded by vacuum with full opening rear heads	September 1, 1992	2 years
MC 330 and MC 331 cargo tanks in chlorine service	September 1, 1992	2 years
MC 331 cargo tanks less than 3,500 gallons water capacity in dedicated propane service constructed of nonquenched and tempered NQT SA-612 steel (See Note 5)	September 1, 1995	10 years
All other cargo tanks	September 1, 1995	5 years
Thickness Test:		
All unlined cargo tanks transporting material corrosive to the tank, except MC 338	September 1, 1992	2 years

MC 331 cargo tanks

Dedicated propane service

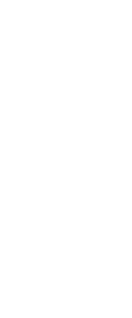
Note 1: If a cargo tank is subject to an applicable inspection or test requirement under the regulations in effect on December 30, 1990, and the due date (as specified by a requirement in effect on December 30, 1990) for completing the required inspection or test occurs before the compliance date listed in table I, the earlier date applies.

Note 2: Pressure testing is not required for MC 330 or MC 331 cargo tanks in dedicated sodium metal service.

Note 3: Pressure testing is not required for uninsulated lined cargo tanks, with a design pressure MAWP 15 psig or less, which receive an external visual inspection and lining inspection at least once each year.

Note 4: Insulated cargo tanks equipped with manholes or inspection openings may perform either an internal visual inspection in conjunction with the external visual inspection or a hydrostatic or pneumatic pressure-test of the cargo tank.

Note 5: A 10-year inspection interval period also applies to cargo tanks constructed of NQT SA-202 or NQT SA-455 steel provided the materials have full-size equivalent (FSE) Charpy vee notch (CVN) energy test data that demonstrated 75% shear-area ductility at 32 °F with an average of 3 or more samples >15 ft-lb FSE with no sample <10 ft-lb FSE.



10 Test & Inspections for MC 331s

Language presents issues at the roadside based on two issues.

- 1) Bobtails
- 2) Dedicated propane service

10 Test & Inspections for MC 331s



Special provision 19

For domestic transportation only, the identification number “UN1075” may be used in place of the identification number specified in column (4) of the §172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.

10 Test & Inspections for MC 331s



Special Provision 19 gases

UN 1011 Butane

UN 1012 Butylene

UN 1055 Isobutylene

UN 1969 Isobutane

UN 1978 Propane

UN 1977 Propylene

10 Test & Inspections for MC 331s



Special Provision 19 gases

All six gases or mixtures of the gases
may be shipped as:

UN1075, Petroleum gases liquefied or

UN1075, Liquefied petroleum gas



10 Test & Inspections for MC 331s

Currently if a bobtail cargo tank meets the requirements for the 10 year internal visual inspection and pressure test the shipping papers, cargo tank marking and emergency response information should all refer to Propane regardless of whether UN 1075 or UN 1978 is used.

- In this case there is no violation.



10 Test & Inspections for MC 331s

The propane industry

Propane delivered to the end user for residential or business use is normally not 100% pure.

It's still classified and shipped as propane because propane is the primary ingredient.



10 Test & Inspections for MC 331s

Propane used by the end user

Safety Data Sheet Breakdown from seven different manufactures

	PSN	Propane %	*Butane %	Ethane %	**Propylene %
1	Propane	85-100	0-2.5	0-5	0-10
2	Propane	87.5-100	0-2.5	0-7	0-10
3	Propane	96-99.9			
4	Propane	100			
5	Propane	100			
6	Propane	>=90	<2.5	<6	<5
7	Propane	80-100	<7.5	<6	<20

1, 2, 6 and 7 are typical end user propane (residential)

3, 4 and 5 are for industrial use requiring more purity

*Includes Isobutane

**Includes propene

10 Test & Inspections for MC 331s



Emergency Response

- Emergency response procedures are the same for all of the liquified petroleum gases (LPGs).
- The 2016 DOT Emergency Response Guidebook sends you to guide 115 for all of the LPGs.



10 Test & Inspections for MC 331s

This brings us to three questions we need PHMSA to clarify.

- 1) The regulations only refer to cargo tanks. Is the intent for this to apply only to bobtails or can it also apply to trailers?
- 2) Can I load a cargo tank with propane and use special provision 19, which would allow the proper shipping name to be Petroleum gases liquified or Liquified petroleum gas and still qualify for the 10 year tests and inspections?
- 3) Does the product have to be 100% propane or can it be classed as propane and be a mix of propane and other liquified petroleum gases as long as propane is the primary gas in the mixture and the material is shipped as propane?
(This is the industry standard.)



10 Test & Inspections for MC 331s

We need a recommendation from the committee to draft a letter requesting an interpretation on these three issues.

The action item will be taken to the board and the letter drafted once we get board approval.



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