

# 49 CFR 173.41 – Applications

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# Outline of Presentation

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# Introduction



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- Classification of Crude Oil offered in Transportation (Class 3 Flammable Liquids)
  - Flash Point ASTM D56 etc....
  - Initial Boiling Point ASTM D86
- DOT Final Rule
- Codified in 49 CFR 173.41
- Sampling and testing program for unrefined petroleum-based products

# Modes of Transport under § 173.41

- Federal Register publication of new rules
- Coded CFR provisions
- Plain reading of § 173.41
- Presentation by PHMSA
- Interpretation by PHMSA as to what constitutes refinement
- Heater- Treater removal of gases is not considered refinement



# 49 CFR 173.41



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## “§173.41 Sampling and testing program for unrefined petroleum-based products.

(a) *General.* Unrefined petroleum-based products offered for transportation must be **properly classed and described as prescribed in §173.22**, in accordance with a sampling and testing program, which specifies at a minimum:

- (1) **A frequency of sampling and testing** that accounts for any appreciable variability of the material (e.g., history, temperature, method of extraction [including chemical use], location of extraction, time of year, length of time between shipments);
- (2) **Sampling prior to the initial offering** of the material for transportation and when changes that may affect the properties of the material occur (*i.e.*, mixing of the material from multiple sources, or further processing and then subsequent transportation);
- (3) **Sampling methods** that ensure a representative sample of the entire mixture, as offered, is collected;

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- (4) Testing methods that enable classification of the material under the HMR;
  - (5) **Quality control measures for sample frequencies;**
  - (6) **Duplicate sampling methods or equivalent measures for quality assurance;**
  - (7) **Criteria for modifying the sampling and testing program;** and
  - (8) Testing or other **appropriate methods** used to identify properties of the mixture relevant to packaging requirements (e.g., compatibility with packaging, identifying specific gravity for filling packages).
- (b) *Certification.* Each person who offers a hazardous material for transportation shall certify, as prescribed by §172.204 of this subchapter, that the material is offered for transportation in accordance with this subchapter, including the requirements prescribed by paragraph (a) of this section.

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(c) *Documentation, retention, review, and dissemination of program.* **The sampling and testing program must be documented in writing (i.e. hardcopy or electronic file thereof) and must be retained for as long as the sampling and testing program remains in effect, or a minimum of one year.** The sampling and testing program must be **reviewed at least annually and revised and/or updated as necessary to reflect changed circumstances.** The **most recent version of the sampling and testing program must be available to the employees who are responsible for implementing it.** When the sampling and testing program is updated or revised, all employees responsible for implementing it must be notified, and the most recent version must be made available.

(d) *Access by DOT to program documentation.* Each person required to develop and implement a sampling and testing program must maintain a copy of the sampling and testing program documentation (or an electronic file thereof) **that is accessible at, or through, its principal place of business, and must make the documentation available upon request at a reasonable time and location to an authorized official of the Department of Transportation.**

**[80 FR 26746, May 8, 2015]”**



# Federal Register - Citation



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*"More Accurate Classification of Unrefined Petroleum-Based Products .....Offerors/Shippers of unrefined petroleum- based products.*

Develop and carry out sampling and testing program for all unrefined petroleum-based products, such as crude oil, to address:

- (1) Frequency of sampling and testing that accounts for any appreciable variability of the material.
  - (2) Sampling prior to the initial offering of the material for transportation and when changes that may affect the properties of the material occur;
  - (3) Sampling methods that ensures a representative sample of the entire mixture, as offered, is collected;
  - (4) Testing methods that enable classification of the material under the HMR;
  - (5) Quality control measures for sample frequencies;
  - (6) Duplicate samples or equivalent measures for quality assurance;
  - (7) Criteria for modifying the sampling and testing program;
  - (8) Testing or other appropriate methods used to identify properties of the mixture relevant to packaging requirements.
- Certify that program is in place, document the testing and sampling program outcomes, and make information available to DOT personnel upon request"

**Reference: 26646 Federal Register / Vol. 80, No. 89 / Friday, May 8, 2015 / Rules and Regulations**

# PHMSA Presentation (Kip Wills)



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## Sampling and Testing Program Overview

- Under new § 173.41 shippers in **all modes** must develop and carry out a sampling and testing program for all unrefined petroleum-based products.
- In addition, shippers must certify that program is in place and make information available to DOT personnel upon request.
- Voluntary use of API RP 3000 may satisfy certain requirements of the new program. However, the API RP 3000 is NOT included as IBR material at this time.

*Reference: Crude by Rail Safety, NAVIGATING NEW RULES & BYPASSING MISPERCEPTIONS, FEBRUARY 1, 2016, 1:30-4:30 PM PRAIRIE ROSE ROOMS - BISMARCK CIVIC CENTER 315 SOUTH 5TH STREET, BISMARCK, ND.*



U.S. Department of Transportation  
Pipeline and Hazardous Materials  
Safety Administration

10/15/2015

To Protect People and the Environment From the Risks of  
Hazardous Materials Transportation

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# Interpretation by PHMSA



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“For the purposes of the HMR, the term, "unrefined petroleum-based products" would be any material that is petroleum based, and has not undergone refinement. Condensates refer to a wide range of products, and may include products from the treatment of crude oil for transportation or a product of refinement. In order to determine whether condensate meets the definition of an unrefined petroleum-based product, information about the specific processing and treatment of material prior to transportation is necessary. Heat treating to reduce vapor pressure or to remove the dissolved gasses in crude oil so that it may be transported for refinement would not meet the American Fuel & Petrochemical Manufacturers (AFPM) or other industry definitions of refining. However, AFPM includes the heating and separation of hot gasses through a distillation column as a refinement process.”

*Reference: PHMSA Interpretation #15-0147 – letter to Argus*

# Summary



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- 49 CFR 173.41 applies to **all modes** of transport of unrefined petroleum-based products
- Sampling and Analysis plans must be established as outlined in 49 CFR 173.41
- Classification parameters – IBP & FP



# References



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1. Classifying and Loading of Crude Oil into Rail Tank Cars, ANSI/API Recommended Practice 3000, First Edition, September 2014.
2. 26706 Federal Register / Vol. 80, No. 89 / Friday, May 8, 2015 / Rules and Regulations.
3. <http://www.phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=bba9667abc340510VgnVCM100000d2c97898RCRD&vgnnextchannel=aa8cd3c1af814110VgnVCM1000009ed07898RCRD&vgnnextfmt=print>
4. <https://www.gpo.gov/fdsys/pkg/FR-2015-05-08/pdf/2015-10670.pdf>
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6. Crude Oil testing requirements, Kip Wills, PHMSA, *ibid* reference 7, 10/15/2015.
7. Crude by Rail Safety, *NAVIGATING NEW RULES & BYPASSING MISPERCEPTIONS*, FEBRUARY 1, 2016, 1:30-4:30 PM PRAIRIE ROSE ROOMS - BISMARCK CIVIC CENTER 315 SOUTH 5TH STREET, BISMARCK, ND.

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