Manual of Petroleum Standards Chapter 12—Calculation of Petroleum Quantities

Section 1—Calculation of Static Petroleum Quantities

Part 2—Calculation Procedures for Tank Cars

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Introduction

This chapter of the *Manual of Petroleum Measurement Standards* describes the standardized method for calculating target loading quantities and actual loaded quantities of liquids in tank cars. Also addressed within this chapter is an explanation of the factors required for the calculations.

Chapter 12—Calculation of Petroleum Quantities
Section 1—Calculation of Static Petroleum Quantities
Part 2—Calculation Procedures for Tank Cars

1 Scope

This chapter is applicable to all crude oils, petroleum products, and petrochemicals (including LPGs and other liquefied gases) transported by rail tank car. It does not cover any products loaded or measured as solids. It defines the terms required to understand the calculations and provides instructions for their use. The cars are assumed to be on level ground.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only edition cited applies. For undated references, the latest edition of the referenced document applies (including any addenda or errata, or both).

API *Manual of Petroleum Measurement Standards (MPMS)* Chapter 1, *Vocabulary*

API *Manual of Petroleum Measurement Standards (MPMS)* Chapter 3.2, *Tank Car Measurement*

API *Manual of Petroleum Measurement Standards (MPMS)* Chapter 10, *Sediment and Water*

API *Manual of Petroleum Measurement Standards (MPMS)* Chapter 11.2.4, *Temperature Correction for the Volume of NGL and LPG, Tables 23E, 24E, 53E, 54E, 59E, and 60E*

API *Manual of Petroleum Measurement Standards (MPMS)* Chapter 11.2.5, *A Simplified Vapor Pressure Correlation for Commercial NGLs*

API *Manual of Petroleum Measurement Standards (MPMS)* Chapter 12.2, *Calculation of Petroleum Quantities Using Dynamic Measurement Methods and Volumetric Correction Factors*

ASTM D1555*, Standard Test Method for Calculation of Volume and Weight of Industrial Aromatic Hydrocarbons and Cyclohexane*

3 Terms, Definitions, Acronyms, and Abbreviations

For the purposes of this document, the following terms and definitions apply. Terms of more general use (i.e. API Gravity, Density, etc.) may be found in API *MPMS* Chapter 1.

3.1 General

3.1.1
capacity table adjustment factor
CTAF
Correction applied to capacity table volumes.

3.1.2
closed loading or closed unloading
The manway remains closed or covered during loading or unloading.