

# **API COMMITTEE ON PETROLEUM MEASUREMENT**

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# API Committee on Petroleum Measurement

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# API Committee on Petroleum Measurement

## COPM Mission and Objectives

# API Committee on Petroleum Measurement Mission

COPM provides leadership in developing and maintaining cost effective, state of the art, hydrocarbon measurement standards and programs based on sound technical principles consistent with current measurement technology, recognized business accounting and engineering practices, and industry consensus.

# COPM Responsibilities

COPM and its subcommittees are responsible for developing the policies of API on hydrocarbon measurement.

COPM engages in Standardization, Governmental Response, and Training.

# COPM Objectives

Develop & maintain performance based measurement standards & practices

Develop guidelines which accelerate the application of new measurement technology

Promote the adoption and use of API measurement standards

# COPM Objectives

Foster education & training to effectively apply measurement standards

Provide representation, including coordination of the USA position, on international petroleum measurement standards committees.

# Standards and Practices

- Physical Properties
- Measuring Equipment
- Measurement Systems
- Measurement Practices

# API COMMITTEE ON PETROLEUM MEASUREMENT

## COPM Subcommittees

# API Committee on Petroleum Measurement Subcommittees

- **Committee on Evaporation Loss Estimation**
- **Committee on Gas Fluids Measurement**
- **Committee on Liquid Measurement**
- **Committee on Measurement Accountability**
- **Committee on Measurement Education and Training**
- **Committee on Measurement Quality/  
(Joint ASTM D02.02)**
- **Committee on Production Measurement and Allocation**

# API COMMITTEE ON PETROLEUM MEASUREMENT

COMQ – Committee on  
Measurement Quality

# COMQ: Committee on Measurement Quality

**COMQ develops, approves, and maintains standards pertaining to measurement quality of hydrocarbons (sometimes in conjunction with other COPM Subcommittees)**

**This a joint committee with ASTM International through ASTM Committee D02.**

**Not all standards developed by the committee are joint API-ASTM standards.**

# Committee on Measurement Quality Standards

- **Temperature Determination, MPMS Chapter 7**
- **Sampling, MPMS Chapter 8**
- **Density Determination, MPMS Chapter 9**
- **Sediment & Water Determination, MPMS Chapter 10**
- **Physical Properties, MPMS Chapter 11**
- **Statistics, MPMS Chapter 13 (Joint with COLM)**

# COMQ Work Groups

## Work Group A

- Temperature (Chapter 7)
- Density (Chapter 9)
- Physical Properties (Chapter 11)

## Work Group B

- Sampling (Chapter 8)
- Sediment and Water (Chapter 10)

# COMQ Chapter 11.1 Physical Properties 2004 Edition

Calculates temperature and pressure volume correction factors for generalized crude oils, refined products and lubricating oils.

Provides the algorithm and implementation procedure for the correction of temperature and pressure effects on density and volume of liquid hydrocarbons.

# Committee on Measurement Quality and ASTM Standards

API	ASTM
Chapter 8.1	ASTM D 4057
Chapter 8.2	ASTM D 4177
Chapter 8.3	ASTM D 5854
Chapter 8.4	ASTM D 5842

# Committee on Measurement Quality and ASTM Standards

API	ASTM
Chapter 9.1	ASTM D 1298
Chapter 9.2	ASTM D 1657
Chapter 9.3	ASTM D 6822

# Committee on Measurement Quality and ASTM Standards

## API

Chapter 10.1

Chapter 10.2

Chapter 10.3

Chapter 10.5

Chapter 10.6

Chapter 10.7

Chapter 10.8

Chapter 10.9

## ASTM

ASTM D 473

ASTM D 4006

ASTM D 4007

ASTM D 95

ASTM D 1796

ASTM D 4377

ASTM D 4807

ASTM D 4928

## COMQ ISO/EI Relations

COMQ provides representation on the International Organization for Standardization (ISO) Technical Committee (TC) 28/Subcommittee (SC) 2, *Measurement of petroleum and related products.*

It also provides representation to the Energy Institute (formerly Institute of Petroleum).

# API COMMITTEE ON PETROLEUM MEASUREMENT

## COPM Standards Development

# Standards Development & Maintenance

**Over 150 COPM Standards, Procedures or Guidelines in the measurement suite.**

**Existing standards reviewed at 5 year intervals:**

- Affirmed, Revised, or Withdrawn.**

**Technology developments continually spur new standards.**

**There are about 30 new or revised standards under development at any given time.**

# API COPM- New Publications 2007

**Ch 11.1A - Addendum to 2004 Edition for Temperature and Pressure Volume Correction Factors for Generalized Crude Oils, Refined Products, and Lubricating Oils**

**Ch 11.2.4 - Temperature Correction for NGL & LPG**

**Ch 11.2.5 - A Simplified Vapor Pressure Correlation for Commercial NGL's**

# API COPM- New Publications 2007

- Ch 12-A – Addendum to all Chapter 12 Standards for Calculation of Petroleum Quantities
- Ch 14.10 – Measurement of Flow to Flares
- Ch 17.10.2 – Measurement of Refrigerated and Pressureized Cargo on Marine Tank Vessels – Part 2: Liquefied Petroleum and Chemical Gases

# **API COPM - New Standards Under Publication 2008**

**Ch 4.9.4 – Determination of the Volume of Displacement  
and Tank Provers by the Gravimetric Method of  
Calibration**

**Chs 11.5.1, 2 and 3 - Physical Properties Data –  
Density/Weight/Volume  
Intraconversion, Parts 1, 2 and 3.**

**Ch 17.11 – Measurement and Sampling of Cargoes on Board  
Tank Vessels Using Closed/Restricted  
Equipment**

**Ch 17.12 – Bulk Liquid Chemical Cargo Inspection**

# API COPM - New Work Approved at October 2007 Meeting

- Ch 12.2.5      **Revise: Calculation of Petroleum Quantities  
Using Dynamic Measurement Methods and  
Volume Correction Factors**
  
- Ch 20.6        **New Recommended Practice for Production  
Allocation Methodologies and Techniques**
  
- Ch 21.1        **Revise: Electronic Gas Measurement**
  
- Ch 22.5        **New Standard for Testing Protocol for  
Electronic Flow Computers for Gas Flows**

# API COMMITTEE ON PETROLEUM MEASUREMENT

## COPM Special Projects

# API COPM Special Projects

## Ethanol/Gasoline Blend VCF Study

### Study Purpose:

1. To measure temperature and volume changes incurred from blending denatured ethanols and gasolines.
2. To measure the density of various blends at specific temperatures and pressures.

# API COPM SPECIAL PROJECTS

## Ethanol/Gasoline Blend VCF Study Project Status

RFPs have been received from several labs and are being evaluated by the Chapter 11.3 TAG

### Outcome: New Standards

Ch 11.3.3 Ethanol Density & VCF Tables

Ch 11.3.4 Gasoline/Ethanol Density & VCF Tables

# API COPM Special Projects

## Chapter 22 Auditing Criteria for Test Facilities

API Consultant is developing auditing and witnessing requirements based on ISO 9001:2000 and ISO 17025 for the auditing and witnessing of Laboratory Test Facilities. The study is using MPMS Chapter 22.2 Testing Protocol-Differential Pressure Flow Measurement Devices as an initial example for the study. However, API is hoping the study will extend to other measurement devices.

# **API COPM Re-Organization Work In Progress**

**The COPM structure is being studied for re-organization. The current plan is to migrate COPM's structure into two functions:**

**EQUIPMENT / TECHNOLOGIES  
and  
PROCESSES / INDUSTRY SEGMENT**

**ALL MPMS Standards would fall into one of the two categories. This plan will be further discussed at COPM in the Spring 2008.**

# API COPM Corporative Development

**In accordance with API Mission and COPM's purpose, to eliminate duplicative efforts, API has joint development arrangements and/or publishing agreements for specific measurement standards with the following organizations:**

- ASTM International (ASTM D02.02 Joint with COMQ)**
- The Energy Institute (EI, UK) – Phoenix Agreement**
- Gas Processors Association (GPA)**
- American Gas Association (AGA)**

# API COMMITTEE ON PETROLEUM MEASUREMENT

## COPM / ISO Relations

# ISO Related Technical Committees

2 - ISO Technical Committees develop standards related to  
COPM activities:

ISO/TC 28 - Petroleum products and lubricants

ISO/TC 193 - Natural Gas

ISO/TC 30 – Measurement of fluid flow in closed conduits

## US TAG To ISO Committees

U.S. participation in the development and approval of ISO Standards is coordinated through US TAGs (Technical Advisory Groups)

U.S. TAG representatives are comprised of API committee members and others and API staff is the administrator on behalf of ANSI

# API COPM

THANK YOU

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