

# ANSI/API RP 3000

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# **API as a Standards Developing Organization (SDO)**

- **API publishes over 600 standards covering all industry segments**
- **API Standards are:**
  - Core of Institute's technical authority
  - Represent industry's best practices and are used in worldwide operations
  - Voluntary
- **API is accredited by the American National Standards Institute, ANSI**

# API Standards Process

- Standards process open to all parties with a direct and material interest
- Recommended Practice: communicates recognized industry practices and may include both mandatory and non-mandatory requirements
- WG had over 70 members, including:
  - Crude oil producers
  - Labs analyzing crude oil, lab testing equipment manufacturers
  - Railroad companies, rail tank car manufacturers and lessors
  - DOT/PHMSA and Transport Canada
  - Associations (COQA, DGAC, AFPM, CAPP)
- Also processed as an ANSI Standard
  - The draft was available for public review

## RP 3000 Scope

- Hazardous Materials Regulations cover all hazardous materials, RP 3000 provides guidance specifically for crude oil
- For rail transportation only
- Includes loading, does not cover offloading of crude oil
- PHMSA encouraged to incorporate API RP 3000 by reference into new DOT regulations
- Consideration will be given to revisiting the standard if new DOT regulations contain different requirements

# RP 3000

- What it does:
  - Classification
    - Identification of the physical and chemical properties of crude oil
    - Hydrogen sulfide risk and additional marking requirements
    - Corrosivity risk
    - Selection of Proper Shipping Name and UN ID Number
    - Documentation of Transportation Requirements
    - Sampling and Testing for Packing Group assignment
  - Quantity and Loading Requirements
    - Volume or Weight Loading Target Quantity (LTQ)
    - What to take into account for calculating LTQ
    - Sampling and Testing for calculating LTQ
    - Measurement Equipment and Processes

## Classification

- To determine the proper hazardous material classification and the assignment of Packing Group (PG) for crude oil and the subsequent selection of the package
  - Crude oil shall be assigned the PG with the greatest level of potential danger, unless testing proves otherwise when
    - multiple crude oils having different PG are mixed together
    - a rail tank car is loaded from sources of different PG
  - Non-hazardous crude still needs periodic sampling and testing to ensure the non-hazardous classification remains valid
  - Safety Data Sheet may not provide sufficient information to be the sole source of information for PG assignment

## Classification

- Testing for flash point – one test method is not recommended over another but comments are provided about applicability of each test method
- Testing for initial boiling point – test methods are listed in the HMR and alternatives must be approved by DOT
  - Alternative best practice for IBP included in API RP 3000: ASTM D7900 with some qualifiers
  - API approaching DOT for approval for this alternative practice

## Classification

- Ongoing sampling and testing program for PG determination
  - Procedures must be in place to ensure no new crudes are introduced downstream of the sample point that could affect the package selection
  - Samples should be obtained as close as possible to rail loading point
  - Specific frequency for sampling and testing is NOT specified; instead factors are listed that should be considered by the offeror to determine frequency of sampling and testing
  - Samples shall be obtained using the closed container method as specified in API MPMS Chapter 8.1-2013/ASTM D4057-12 UNLESS it can be demonstrated closed container sampling not necessary
  - Sampling & testing program example given in Annex A



# Quantity Measurement for Overfill Prevention

- Loading target quantity (LTQ) determined by calculations to ensure compliance with regulatory quantity requirements for weight & outage
  - Volume or weight can be used in establishing the LTQ; the more restrictive, lower quantity shall be used
- Since there are many measurement processes and scenarios unique to each facility, facility procedures shall be documented and utilized
  - Specific calculation procedures not included, ex. in Annex B
  - Items to be included in the calculations listed and guidance provided: temperature/density/VCF
- Does not cover offloading, although must take into account the heel, clingage and residue when calculating LTQ

## Record Retention

- Document retention requirement of records, shipping papers etc.
- Shipping Paper
  - Shall include the date of acceptance by the originating carrier
  - Party that provides a shipping paper
    - Shall retain a copy or electronic image
    - Accessible at, or through the party's principal place of business
    - Available upon request to an authorized official at reasonable times and locations
- Each Offeror shall retain the shipping paper(s) and documentation of quantity and quality, including results of sampling and testing for the classification of crude oil, for a minimum of 2 years after the crude oil is accepted by the originating carrier