Manual of Petroleum Measurement Standards

Chapter 11.2.1 and 11.2.1M—Compressibility Factors for Hydrocarbons: 0–90° API Gravity and 638–1074 Kilograms per Cubic Metre Ranges

Chapter 11.2.3 and 11.2.3M—Water Calibration of Provers

Computer Tape Information and Documentation

FIRST EDITION, AUGUST 1984

ERRATUM, OCTOBER 1984

American Petroleum Institute

Helping You Get The Job Done Right.SM

Documents
Document Sharing Hub

Full document details: API MPMS 11.2.1M 1984 errata 1984 scan

Manual of Petroleum Measurement Standards

Chapter 11.2.1 and 11.2.1M—Compressibility Factors for Hydrocarbons: 0–90°API Gravity and 638–1074 Kilograms per Cubic Metre Ranges

Chapter 11.2.3 and 11.2.3M—Water Calibration of Provers

Computer Tape Information and Documentation

Measurement Coordination Department

FIRST EDITION, AUGUST 1984

ERRATUM, OCTOBER 1984

American
Petroleum
Institute

Documents
Document Sharing Hub

Full document details: API MPMS 11.2.1M 1984 errata 1984 scan

Nothing contained in any API publication is to be construed as granting any right, by implicating or otherwise, for the manufacture, sale, or use in connection with any method, apparatus, or product covered by letters patent nor as indemnifying anyone from or against any liability for infringement of letters patent.

This publication may be used by anyone desiring to do so. The Institute hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use; for the violation of any federal, state, or municipal regulation with which an API publication may conflict; or for the infringement of any patent resulting from the use of an API publication. Every effort has been made by the Institute to assure the accuracy and reliability of the data presented.

Copyright © 1984 American Petroleum Institute

Documents
Document Sharing Hub

Full document details: API MPMS 11.2.1M 1984 errata 1984 scan

FOREWORD

This publication and computer tape provide tables to correct hydrocarbon volumes metered under pressure to corresponding volumes at the equilibrium pressure for the metered temperature and to calibrate volumetric provers. Tables are provided in customary and metric (SI) units.

Suggested revisions are invited and should be submitted to the director, Measurement Coordination Department, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005.

Documents
Document Sharing Hub

Full document details: API MPMS 11.2.1M 1984 errata 1984 scan

MEMBERS OF THE COMMITTEE ON STATIC PETROLEUM MEASUREMENT WORKING GROUP ON COMPRESSIBILITY

F. P. Gielzecki (Retired)
Imperial Oil, Ltd.

R. A. Griffith (Chairman)
Getty Trading and Transportation Company

J. A. Hamshar
Cities Service Oil and Gas Corporation

K. T. Liu, Ph.D.
Gulf Research and Development Company

M. A. Plummer, Ph.D.
Marathon Oil Company

J. Polowek
Interprovincial Pipe Line Ltd.

G. W. Singletary
Texas Eastern Transmission Company

G. W. Swinney (Retired)
Phillips Petroleum Company

Documents
Document Sharing Hub

Full document details: API MPMS 11.2.1M 1984 errata 1984 scan

CONTENTS

Page

COMPUTER TAPE INFORMATION vii

CHAPTER 11.2.1—COMPRESSIBILITY FACTORS FOR HYDROCARBONS: 0–90°API GRAVITY RANGE

11.2.1.1 Scope 1
11.2.1.2 History and Development 1
11.2.1.3 Data Base and Limits of the Standard 1
11.2.1.4 Example Use of the Standard 1
11.2.1.5 Mathematical Model for the Standard 3
11.2.1.5.1 Basic Model and Uncertainty Analysis 3
11.2.1.5.2 Calculation Procedure 3
11.2.1.6 References 4

Text Tables
1—Data Base and Experimental Conditions for Chapter 11.2.1 2
2—Volumetric Uncertainty Analysis for Chapter 11.2.1 3

Figure
1—Comparison of Data Base and Extrapolated Regions for Chapter 11.2.1 2

CHAPTER 11.2.1M—COMPRESSIBILITY FACTORS FOR HYDROCARBONS: 638–1074 KILOGRAMS PER CUBIC METRE RANGE

11.2.1.1M Scope 4
11.2.1.2M History and Development 4
11.2.1.3M Data Base and Limits of the Standard 4
11.2.1.4M Example Use of the Standard 5
11.2.1.5M Mathematical Model for the Standard 5
11.2.1.5.1M Basic Model and Uncertainty Analysis 5
11.2.1.5.2M Calculation Procedure 7
11.2.1.6M References 7

Text Tables
1—Data Base and Experimental Conditions for Chapter 11.2.1M 6
2—Volumetric Uncertainty Analysis for Chapter 11.2.1M 7

Figure
1—Comparison of Data Base and Extrapolated Regions for Chapter 11.2.1M 6

CHAPTER 11.2.3—WATER CALIBRATION OF VOLUMETRIC PROVERS

11.2.3.1 Scope 8
11.2.3.2 History and Development 8
11.2.3.3 Type and Limits of the Standard 8

Documents
Document Sharing Hub

Full document details: API MPMS 11.2.1M 1984 errata 1984 scan

11.2.3.4 Example Use of the Standard 8
11.2.3.5 Mathematical Model for the Standard 9
11.2.3.6 Uncertainty Analysis 9
11.2.3.7 References 9

CHAPTER 11.2.3M—WATER CALIBRATION OF VOLUMETRIC PROVERS

11.2.3.1M Scope 9
11.2.3.2M History and Development 9
11.2.3.3M Type and Limits of the Standard 9
11.2.3.4M Example Use of the Standard 10
11.2.3.5M Mathematical Model for the Standard 10
11.2.3.6M Uncertainty Analysis 10
11.2.3.7M References 10

Documents
Document Sharing Hub
Full document details: API MPMS 11.2.1M 1984 errata 1984 scan