

INTERNATIONAL STANDARD

ISO
91-1

Second edition
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Petroleum measurement tables —

Part 1:

Tables based on reference temperatures of
15 °C and 60 °F

Tables de mesure du pétrole —

*Partie 1: Tables basées sur les températures de référence de 15 °C et
60 °F*



Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 91-1 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Sub-Committee SC 3, *Static petroleum measurement*.

This second edition cancels and replaces the first edition (ISO 91-1:1982), of which it constitutes a technical revision.

ISO 91 consists of the following parts, under the general title *Petroleum measurement tables*:

- Part 1: *Tables based on reference temperatures of 15 °C and 60 degrees F*
- Part 2: *Tables based on a reference temperature of 20 °C*

Annex A forms an integral part of this part of ISO 91. Annex B is for information only.

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Introduction

The tables referred to in ISO/R 91:1970 were developed during the late 1940's and were based on data for crude petroleum and petroleum fractions published in 1916. Some later data on natural gasolines reported in 1942 were also used. The revised tables referred to in ISO 91-1:1982 were prepared by the American Petroleum Institute following the development of a new data base by the National Bureau of Standards (USA). This study included the examination of 463 samples of crude oil and refined products. The samples represented 67 % of world crude petroleum production and 68 % of the estimated reserves in 1974. The present revision takes account of subsequent publications.

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Petroleum measurement tables —

Part 1:

Tables based on reference temperatures of 15 °C and 60 °F

1 Scope

This part of ISO 91 refers to petroleum measurement tables based on reference temperatures of 15 °C and 60 °F.

The standard reference temperature for petroleum measurement adopted in ISO 5024 [4] is 15 °C, and should be used for international trade. However, it is recognized that its use is not yet universally accepted and references to tables based on 60 °F have therefore been included in this part of ISO 91 and tables based on 20 °C are covered in ISO 91-2[1].

2 Normative references

The tables that form the basis of this part of ISO 91 contain printing errors which are identified in other documents listed below. These subsidiary documents constitute, through reference in the text, an integral part of this part of ISO 91.

API Standard 2540, *Manual of petroleum measurement standards, Chapter 11.1 — Volume correction factors*:

Volumes I to X, 1980;¹⁾

Volumes XIII and XIV, 1982.¹⁾

API Document, *Editorial amplification of volume X — Background, development, and computer documentation*, American Petroleum Institute, Washington DC, 1980.

API Document, *Errata sheet to tables 23B and 53B*, American Petroleum Institute, Washington DC, 1981.

API Document, *The use of the petroleum measurement tables — API STD. 2540 (CH. 11.1), ASTM D 1250 and IP 200 (1980)*, American Petroleum Institute, Washington DC, 1984 (revised June 1987).

ASTM D 1250, *Petroleum measurement tables*:

Volumes I to X, 1980;¹⁾

Volume XI/XII, 1982.¹⁾

ASTM-IP-API, *Petroleum measurement tables for light hydrocarbon liquids, density range 0.500 to 0.653 kg/litre at 15 °C*, published for the Institute of Petroleum by John Wiley and Sons, 1986.²⁾

IP Petroleum Measurement Paper No. 2, *Guidelines for users of the petroleum measurement tables (API STD. 2540; IP 200; ANSI/ASTM D 1250)*, the Institute of Petroleum, London, 1984.³⁾

1) All volumes may be purchased from the publishers, the American Petroleum Institute, c/o Publication and Distribution Section, 120 L Street NW, Washington DC 20005, USA, or from the American Society for Testing and Materials, 1912 Race Street, Philadelphia, Pa 19103, USA. The names of local suppliers may be obtained from national standards organizations. The tables are also available on microfiche and the computer sub-routine as magnetic tape or as FORTRAN card decks.

2) This publication may be purchased from John Wiley and Sons Ltd, Distribution Centre, Shripney Road, Bognor Regis, West Sussex PO22 9SA, UK, or from a local bookseller.

3) This publication may be purchased from the Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR, UK.