

**Petroleum liquids and  
liquefied petroleum  
gases —  
Measurement —  
Standard reference  
conditions**

ICS 75.080; 75.180.30

## National foreword

This British Standard reproduces verbatim ISO 5024:1999 and implements it as the UK national standard. It supersedes BS 5579:1978 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee PTI/12, Petroleum measurement and sampling, to Subcommittee PTI/12/1, Static and dynamic measurement, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

### Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii and iii, a blank page, page 1 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

### Amendments issued since publication

Amd. No.	Date	Comments

This British Standard, having been prepared under the direction of the Sector Committee for Materials and Chemicals, was published under the authority of the Standards Committee and comes into effect on 15 September 1999

© BSI 09-1999

ISBN 0 580 35061 4

INTERNATIONAL  
STANDARD

ISO  
5024

Second edition  
1999-05-01

---

---

**Petroleum liquids and liquefied petroleum  
gases — Measurement — Standard  
reference conditions**

*Produits pétroliers liquides et gaz de pétrole liquéfiés — Mesurage —  
Conditions normales de référence*



Reference number  
ISO 5024:1999(E)

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 5024 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 3, *Static petroleum measurement*.

This second edition cancels and replaces the first edition (ISO 5024:1976), of which it constitutes a technical revision in that it excludes natural gas from the scope.

## Introduction

Most custody transfers of crude petroleum and its products are transacted in volumetric quantities. Since crude oils and petroleum products have relatively high coefficients of thermal expansion and compressibility, volumes are corrected to standard conditions of temperature and pressure in order to provide a meaningful and consistent basis for measurement. The definition of standard reference conditions is therefore of fundamental importance in measurement, calculation and accounting of petroleum quantities.

At the time of publication of this International Standard, reference conditions for crude petroleum and its products at 20 °C and 60 °F are still in use in some countries.

It is hoped that the worldwide trend to the exclusive use of the International System of Units (SI) will ultimately establish a single uniform set of standard reference conditions which will further simplify the requirements of world trade and commerce.



# Petroleum liquids and liquefied petroleum gases — Measurement — Standard reference conditions

## 1 Scope

This International Standard specifies the standard reference conditions of pressure and temperature for measurements carried out on crude petroleum and its products, including liquefied petroleum gases.

It excludes natural gas.

NOTE Standard reference conditions for natural gas are given in ISO 13443<sup>1)</sup>.

## 2 Standard reference conditions

The standard reference conditions of pressure and temperature for use in measurements on crude petroleum and its products shall be 101,325 kPa<sup>2)</sup> (absolute) and 15 °C, with the exception of liquid hydrocarbons having a vapour pressure greater than atmospheric at 15 °C, in which case the standard pressure shall be equilibrium vapour pressure at 15 °C.

---

1) ISO 13443:1996, *Natural gas — Standard reference conditions*.

2) 101,325 kPa = 1,013 25 bar = 1 013, 25 mbar = 1 atm

---

# **BSI — British Standards Institution**

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

## **Revisions**

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

## **Buying standards**

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

## **Information on standards**

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001.

## **Copyright**

Copyright subsists in all BSI publications. BSI also holds the copyright, in the UK, of the publications of the international standardization bodies. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI.

This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any other purpose than implementation then the prior written permission of BSI must be obtained.

If permission is granted, the terms may include royalty payments or a licensing agreement. Details and advice can be obtained from the Copyright Manager. Tel: 020 8996 7070.