



SLOVENSKI STANDARD SIST EN ISO 4404-1:2006

01-november-2006

BUZU]b'bUZb]dfc]nj cX]!'8 c`c Ub^Y` cfcn]g_Y`cXdcfbcgh]`bY[cf`^j] \]XfUj`] b] hY_c]b`!`%`XY.`JcXbY`hY_c]bY`fIGC`((\$(!%&\$\$\$%L

Petroleum and related products - Determination of the corrosion resistance of fire-resistant hydraulic fluids - Part 1: Water-containing fluids (ISO 4404-1:2001)

Mineralölerzeugnisse und verwandte Produkte - Bestimmung der korrosionsverhindernden Eigenschaften von schwer entflammbaren Druckflüssigkeiten - Teil 1: Wasser enthaltende Flüssigkeiten (ISO 4404-1:2001)

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b10012559dcu/sist-en-iso-4404-1-2006>

Pétrole et produits connexes - Détermination de la résistance à la corrosion de fluides hydrauliques difficilement inflammables - Partie 1: Fluides contenant de l'eau (ISO 4404-1:2001)

Ta slovenski standard je istoveten z: EN ISO 4404-1:2006

ICS:

75.120 Pã:æ|ã } Å` ãã Hydraulic fluids

SIST EN ISO 4404-1:2006 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 4404-1:2006

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 4404-1

September 2006

ICS 75.120

English Version

**Petroleum and related products - Determination of the corrosion
resistance of fire-resistant hydraulic fluids - Part 1: Water-
containing fluids (ISO 4404-1:2001)**

Pétrole et produits connexes - Détermination de la
résistance à la corrosion de fluides hydrauliques
difficilement inflammables - Partie 1: Fluides contenant de
l'eau (ISO 4404-1:2001)

Mineralölerzeugnisse und verwandte Produkte -
Bestimmung der korrosionsverhindernden Eigenschaften
von schwer entflammaren Druckflüssigkeiten - Teil 1:
Wasser enthaltende Flüssigkeiten (ISO 4404-1:2001)

This European Standard was approved by CEN on 17 August 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 4404-1:2006 (E)**Foreword**

The text of ISO 4404-1:2001 has been prepared by Technical Committee ISO/TC 28 "Petroleum products and lubricants" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 4404-1:2006 by Technical Committee CEN/TC 19 "Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2007, and conflicting national standards shall be withdrawn at the latest by March 2007.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW**Endorsement notice**
(standards.iteh.ai)

The text of ISO 4404-1:2001 has been approved by CEN as EN ISO 4404-1:2006 without any modifications.

[SIST EN ISO 4404-1:2006](https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>

INTERNATIONAL STANDARD

ISO 4404-1

First edition
2001-12-01

Corrected version
2002-06-01

Petroleum and related products — Determination of the corrosion resistance of fire-resistant hydraulic fluids —

Part 1: Water-containing fluids

iTeh STANDARD PREVIEW

*Pétrole et produits connexes — Détermination de la résistance à la
corrosion de fluides hydrauliques difficilement inflammables —*

Partie 1: Fluides contenant de l'eau

SIST EN ISO 4404-1:2006

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>



Reference number
ISO 4404-1:2001(E)

© ISO 2001

ISO 4404-1:2001(E)**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 4404-1:2006](https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>

© ISO 2001

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Principle.....	2
5 Reagents and materials	2
6 Apparatus	2
7 Producing the test fluid from an HFA type fluid concentrate	5
8 Procedure	6
9 Expression of results	8
10 Precision.....	8
11 Test report.....	8
Annex A (normative) Preparation of test waters	9
Annex B (informative) Equivalent specifications of standard test materials for test strips	11
Annex C (informative) Explanatory comments	12

iTeh STANDARD PREVIEW

(standards.iteh.ai)

SIST EN ISO 4404-1:2006

[https://standards.iteh.ai/catalog/standards/sist/d9716056-16ff-4afd-8391-](https://standards.iteh.ai/catalog/standards/sist/d9716056-16ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006)

b1bb12539ded/sist-en-iso-4404-1-2006

ISO 4404-1:2001(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.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO 4404 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 4404-1 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

This first edition of ISO 4404-1, together with ISO 4404-2, cancels and replaces ISO 4404:1998.

ISO 4404 consists of the following parts, under the general title *Petroleum and related products — Determination of the corrosion resistance of fire-resistant hydraulic fluids*:

- *Part 1: Water-containing fluids* [SIST EN ISO 4404-1:2006](https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006)
- *Part 2: Non-aqueous fluids* <https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>

Annex A forms a normative part of this part of ISO 4404. Annexes B and C are for information only.

This corrected version of ISO 4404-1:2001 incorporates corrections to

- the Foreword (information regarding the document cancelled and replaced by this part of ISO 4404 has been added), and
- the second paragraph of clause 1 (“HED” has been replaced by “HFD”).

Introduction

Water-containing hydraulic fluids are used in hydraulic systems where fire-resistant fluids are required due to operating conditions. The corrosion resistance of such fluids has to be assessed in order to choose a suitable system design and prepare maintenance instructions. The method established by this part of ISO 4404 is based on CETOP R 48H¹⁾ and the 7th edition of the Luxembourg report²⁾.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 4404-1:2006](https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006)

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>

1) *Procedure for determining corrosion resistant characteristics of water based fire resistant fluids* (1984).

2) Safety and Health Commission for the Mining and other Extractive Industries, Doc. No. 4746/10/91 EN (for English version, FR for French version), April 1994, *Requirements and tests applicable to fire-resistant hydraulic fluids used for power transmissions and control (hydrostatic and hydrokinetic)*, available from the Commission of the European Communities, Directorate-General V, Unit V.F.4 "Extractive, Iron and Steel Industries", Bâtiment Jean Monnet, C4/65, L-2920 Luxembourg.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 4404-1:2006](#)

<https://standards.iteh.ai/catalog/standards/sist/d971b056-f6ff-4afd-8391-b1bb12539ded/sist-en-iso-4404-1-2006>

Petroleum and related products — Determination of the corrosion resistance of fire-resistant hydraulic fluids —

Part 1: Water-containing fluids

WARNING — The use of this part of ISO 4404 may involve hazardous materials, operations and equipment. This part of ISO 4404 does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this part of ISO 4404 to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This part of ISO 4404 specifies a test method to determine the influence on metals of fire-resistant fluids in categories HFA, HFB and HFC, as classified in ISO 6743-4. It evaluates the corrosion protection provided by these fluids towards metal components used in hydraulic systems and installations.

A similar technique for fluids in category HFD is described in ISO 4404-2:—³⁾.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 4404. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 4404 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 209-1:1989, *Wrought aluminium and aluminium alloys — Chemical composition and forms of products — Part 1: Chemical composition*

ISO 426-1:1983, *Wrought copper-zinc alloys — Chemical composition and forms of wrought products — Part 1: Non-lead and special copper-zinc alloys*

ISO 648:1977, *Laboratory glassware — One-mark pipettes*

ISO 752:1981, *Zinc ingots*

ISO 1337:1980, *Wrought coppers (having minimum copper contents of 99,85 %) — Chemical composition and forms of wrought products*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 3819:1985, *Laboratory glassware — Beakers*

3) To be published.