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Petroleum and related products - Determination of the extreme-pressure and anti-wear properties of fluids - Four ball method (European conditions) (ISO 20623:2003)

Mineralölzeugnisse und verwandte Produkte - Bestimmung der EP-Eigenschaften und Verschleißkennwerte von Flüssigkeiten - Verfahren mit dem 4-Kugel-Apparat (Europäische Bedingungen) (ISO 20623:2003)

Pétrole et produits connexes - Détermination des propriétés extreme pression et anti-usure des fluides - Essai a quatre billes (conditions européennes) (ISO 20623:2003)

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Ta slovenski standard je istoveten z: EN ISO 20623:2003

ICS:

75.100	Maziva	Lubricants, industrial oils and related products
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 20623

December 2003

ICS 75.100

English version

**Petroleum and related products - Determination of the extreme-pressure and anti-wear properties of fluids - Four ball method
(European conditions) (ISO 20623:2003)**

Pétrole et produits connexes - Détermination des propriétés extrême pression et anti-usure des fluides - Essai à quatre billes (conditions européennes) (ISO 20623:2003)

Mineralölerzeugnisse und verwandte Produkte - Bestimmung der EP-Eigenschaften und Verschleißkennwerte von Flüssigkeiten - Verfahren mit dem 4-Kugel-Apparat (Europäische Bedingungen) (ISO 20623:2003)

This European Standard was approved by CEN on 10 November 2003.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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

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EN ISO 20623:2003 (E)

CORRECTED 2004-03-03

Foreword

This document (EN ISO 20623:2003) has been prepared by Technical Committee ISO/TC 28 "Petroleum products and lubricants" in collaboration with Technical Committee CEN/TC 19 "Petroleum products, lubricants and related products", 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 June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

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

Endorsement notice

The text of ISO 20623:2003 has been approved by CEN as EN ISO 20623:2003 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

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Annex ZA (normative)

Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 683-17	1999	Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels	EN ISO 683-17	1999
ISO 3170	1988	Petroleum liquids - Manual sampling	EN ISO 3170	1998

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ISO
20623

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Petroleum and related products — Determination of the extreme-pressure and anti-wear properties of fluids — Four ball method (European conditions)

*Pétrole et produits connexes — Détermination des propriétés extrême
pression et anti-usure des fluides — Essai quatre billes (conditions
européennes)*

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Contents

Page

Foreword.....	iv
1 Scope.....	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Reagents and materials.....	3
5.1 Cleaning solvents	3
6 Apparatus.....	3
6.1 Four-ball extreme-pressure lubricant testing machine.....	3
6.2 Friction recording device (optional).....	5
6.3 Loading discs	5
6.4 Microscope	5
6.5 Timer.....	5
6.6 Test balls.....	6
6.7 Assembly device.....	6
7 Samples and sampling	6
8 Preparation of apparatus.....	6
9 General procedure	6
10 Test procedures	7
10.1 Mean Hertz load (MHL)	7
10.2 Wear-load curve, welding load, flash temperature parameter and initial seizure load	8
10.3 Wear test	8
11 Calculations	8
11.1 General	8
11.2 Mean Hertz load.....	8
11.3 Wear-load curve, flash temperature parameter and initial seizure load	9
12 Expression of results.....	10
13 Precision	10
13.1 General	10
13.2 Repeatability	11
13.3 Reproducibility	11
14 Test report.....	11
Annex A (normative) Mean Hertz load data sheet.....	12
Annex B (normative) Calibration of friction recorder springs	14
Bibliography	17

ISO 20623:2003(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 2.

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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20623 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

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Petroleum and related products — Determination of the extreme-pressure and anti-wear properties of fluids — Four ball method (European conditions)

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

1 Scope

This International Standard specifies procedures for the measurement of the extreme-pressure (EP) and anti-wear properties of lubricating oils and fluids by means of the four ball machine. The conditions of test are those that apply in Europe and other areas that have similar electrical supply characteristics (200 V to 250 V, 50 Hz). In North America, the conditions of test are slightly different, but provide a similar ranking of the lubricating properties of fluids. The test conditions are not intended to simulate particular service conditions, but to provide information over a range of standard conditions for the purpose of research, development, quality control and fluid ranking. The output is used in lubricant specifications.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 683-17:1999, *Heat-treated steels, alloy steels and free-cutting steels — Part 17: Ball and roller bearing steels*

ISO 3170:—¹⁾, *Petroleum liquids — Manual sampling*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

wear

removal of metal from the test pieces

NOTE Under conditions of low load and low friction, wear causes only small circular scars on the three stationary balls and a ring on the rotating ball. The diameters of these scars are slightly larger than the diameter of the indentation due to the static load (Hertz diameter).

¹⁾ To be published. (Revision of ISO 3170:1988)