

**Lubricated metal-powder mixes - Determination of
lubricant content - Soxhlet extraction method (ISO
13944:2012)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 13944:2012 sisaldab Euroopa standardi EN ISO 13944:2012 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 13944:2012 consists of the English text of the European standard EN ISO 13944:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.11.2012.	Date of Availability of the European standard is 14.11.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 77.160

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

Lubricated metal-powder mixes - Determination of lubricant
content - Soxhlet extraction method (ISO 13944:2012)

Mélanges de poudres métalliques lubrifiées - Détermination
de la teneur en lubrifiant - Méthode d'extraction au Soxhlet
(ISO 13944:2012)

Metallpulver mit Gleitmittelzusatz - Bestimmung des
Gleitmittelan-teils - Extraktionsverfahren nach Soxhlet (ISO
13944:2012)

This European Standard was approved by CEN on 13 August 2012.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 13944:2012) has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy".

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 May 2013, and conflicting national standards shall be withdrawn at the latest by May 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 13944:2006.

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

Endorsement notice

The text of ISO 13944:2012 has been approved by CEN as a EN ISO 13944:2012 without any modification.

Lubricated metal-powder mixes — Determination of lubricant content — Soxhlet extraction method

1 Scope

This International Standard specifies a method for the determination of the lubricant content of a powder mix. The method is also suitable for preparing samples for measuring the content of elements, e.g. graphite and oxygen, the determination of which is interfered with by the presence of a lubricant.

A condition of the application of the method is that a suitable solvent for the lubricant concerned is known and available.

2 Principle

The lubricant is extracted from a weighed test portion using a suitable solvent. The test portion is reweighed after the extraction, and the percentage mass loss, representing the extracted lubricant, is calculated.

The extracted test portion can then be used to determine, by the normal methods, the content of other constituents, without any interference from the lubricant.

3 Apparatus and materials

3.1 Analytical balance, capable of weighing the sintered-glass filter crucible (see 3.2.3), together with the test portion, to the nearest 1 mg.

3.2 Soxhlet apparatus, as shown in Figure 1, with ungreased joints, consisting of the following parts.

3.2.1 Allihn (bulb-type) condenser.

3.2.2 Soxhlet extractor, with a volume of 150 ml to 200 ml.

3.2.3 Sintered-glass filter crucible (porosity grade P 160¹⁾), **filter paper** (with a filtering speed of 1 000 ml/min), **glass wool** and a **length of glass tubing** with a diameter of about 30 mm and long enough to serve the purpose mentioned in 5.3.

In cases where the lubricant content to be determined is less than 0,5 %, all these items shall be rinsed with organic solvent (3.3) before use.

3.2.4 Round-bottomed flask, with a capacity of 500 ml, containing a boiling aid.

3.2.5 Heating mantle, of sufficient power to evaporate the solvent at a rate of not less than 25 ml/min.

3.3 Organic solvent, suitable for extraction of the lubricant concerned. Examples of such solvents are xylene, toluene and petroleum ether.

1) As defined in ISO 4793:1980, *Laboratory sintered (fritted) filters — Porosity grading classification and designation*.