

Lithopone pigments - General requirements and
methods of testing (ISO 473:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 473:2020 sisaldab Euroopa standardi EN ISO 473:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 473:2020 consists of the English text of the European standard EN ISO 473:2020.
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 14.10.2020.	Date of Availability of the European standard is 14.10.2020.
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 87.060.10

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:
Koduleht 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:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Lithopone pigments - General requirements and methods of testing (ISO 473:2019)

Lithopone pour peintures - Exigences générales et méthodes d'essai (ISO 473:2019)

Lithopone-Pigmente - Allgemeine Anforderungen und Prüfverfahren (ISO 473:2019)

This European Standard was approved by CEN on 28 September 2020.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of ISO 473:2019 has been prepared by Technical Committee ISO/TC 256 "Pigments, dyestuffs and extenders" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 473:2020 by Technical Committee CEN/TC 298 "Pigments and extenders" the secretariat of which is held by DIN.

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 April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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

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

Endorsement notice

The text of ISO 473:2019 has been approved by CEN as EN ISO 473:2020 without any modification.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Marking and labelling	2
5 Required characteristics and their tolerances	2
6 Sampling	3
7 Determination of barium sulfate and total zinc content	3
7.1 General	3
7.2 Method A	3
7.2.1 Principle	3
7.2.2 Reagents	3
7.2.3 Apparatus	5
7.2.4 Procedure	5
7.2.5 Expression of results	5
7.3 Method B	6
7.3.1 Principle	6
7.3.2 Reagents	6
7.3.3 Apparatus	8
7.3.4 Procedure	8
7.3.5 Expression of results	8
8 Determination of zinc oxide content	8
8.1 Reagents	8
8.2 Apparatus	9
8.3 Procedure	9
8.4 Expression of results	9
9 Test report	10
Bibliography	11

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 256, *Pigments, dyestuffs and extenders*.

This third edition cancels and replaces the second edition (ISO 473:1982), which has been technically revised. The main changes compared to the previous edition are as follows:

- a new specification of lithopone with a 20 % zinc sulphide (ZnS) content (lithopone 20 %) has been included;
- a new method of test, Method B (Na₂EDTA titration method) has been introduced;
- the text of the document has been editorially revised.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Over the last decade, requirements such as the hiding power for exterior coatings have become less stringent with a view to reducing cost. In addition, there is a growing demand in the international exterior coatings market for lithopone with a 20 % total zinc sulphide (ZnS) content rather than the more expensive lithopone with a 30 % or 60 % total zinc sulphide content (hereinafter referred to as lithopone 20 %, lithopone 30 % and lithopone 60 %, respectively). The previous edition of this document provided for only two specifications of lithopone, namely lithopone 30 % and lithopone 60 %. To avoid confusion and disputes related to the transportation, release and clearance of lithopone 20 %, it has been included as a third specification in this document.

The determination of the total zinc content in lithopone using the potassium hexacyanoferrate titration method is rather complicated to operate and apt to fail. With such a test method, fluctuations in the temperature of the solution may be experienced and it is difficult to read the titration end point. Therefore, the Na₂EDTA direct titration method has been added to this document, which is time-saving and easier to operate, and with a proven accuracy. This testing method is based on Reference [2].

Lithopone pigments — General requirements and methods of testing

WARNING — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

1 Scope

This document specifies the requirements and the corresponding test methods for three types of lithopone pigments.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 385, *Laboratory glassware — Burettes*

ISO 648, *Laboratory glassware — Single-volume pipettes*

ISO 787-1, *General methods of test for pigments and extenders — Part 1: Comparison of colour of pigments*

ISO 787-2, *General methods of test for pigments and extenders — Part 2: Determination of matter volatile at 105 °C*

ISO 787-3, *General methods of test for pigments and extenders — Part 3: Determination of matter soluble in water — Hot extraction method*

ISO 787-4, *General methods of test for pigments and extenders — Part 4: Determination of acidity or alkalinity of the aqueous extract*

ISO 787-5, *General methods of test for pigments and extenders — Part 5: Determination of oil absorption value*

ISO 787-7, *General methods of test for pigments and extenders — Part 7: Determination of residue on sieve — Water method — Manual procedure*

ISO 787-17, *General methods of test for pigments and extenders — Comparison of lightening power of white pigments*

ISO 1042, *Laboratory glassware — One-mark volumetric flasks*

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

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 18451-1, *Pigments, dyestuffs and extenders — Terminology — Part 1: General terms*

ISO 18451-2, *Pigments, dyestuffs and extenders — Terminology — Part 2: Classification of colouring materials according to colouristic and chemical aspects*