INTERNATIONAL STANDARD

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Aluminium pigments for paints —

Part 2: Vacuum metallized aluminium pigments

Pigments d'aluminium pour peintures —

Partie 2: Pigments d'aluminium métallisé sous vide

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Contents

Page

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 of 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 www.iso.org/iso/foreword.html.

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

This first edition of ISO 1247-2, together with ISO 1247-1, cancels and replaces ISO 1247:1974, which has been technically revised. It also incorporates the Amendment ISO 1247:1974/Amd 1:1982.

The main changes compared to the previous edition are as follows:

— the title has been changed;

— the mandatory Clause 3, Terms and definitions, has been added and the definition of the vacuum metallized aluminium pigment (VMP) has been included;

— former Clause 3, Description, has been deleted and the content has been listed under the new terms and definitions clause (3.1);

— former Clause 4, Classification, has been deleted;

— the requirements and test methods for "leafing power" have been deleted;

— former Clause 5, now Clause 4, has been re-named "Requirements and test methods";

— former Clause 6, Packing, has been deleted;

— former Clause 7, Sampling, has been reduced to a reference to ISO 15528 and has been renumbered Clause 5;

— the normative references have been updated and the text has been editorially revised.

A list of all parts in the ISO 1247 series can be found on the ISO website.

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 https://www.iso.org/members.html.

Aluminium pigments for paints —

Part 2:
Vacuum metallized aluminium pigments

1 Scope

This document specifies the requirements and corresponding test methods for vacuum metallized aluminium pigments (VMP) suitable for use in paints and printing ink industries.

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 1247-1:2021, *Aluminium pigments for paints — Part 1: General aluminium pigments*

ISO 13320, *Particle size analysis — Laser diffraction 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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18451-1, ISO 18451-2 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
vacuum metallized aluminium pigment
VMP
pigment produced in a vacuum metallizing process and subsequent sizing of the vacuum aluminized foils

Note 1 to entry: Vacuum metallizing process is also referred to as physical vapour deposition process (PVD).

Note 2 to entry: The pigments have non-leafing characteristics, the surface may be untreated or treated by technical processing including conversion into leafing characteristics.

4 Requirements and test methods

The material shall have the characteristics given in the appropriate column of Table 1.

The liquid shall have a percentage of 60 % to 95 % mass fraction of a solvent, such as a polar solvent as 2-butoxyethanol, isopropanol, acetates, or other appropriate polar solvent to be agreed between the interested parties.

Table 1 — Requirements and test methods

Characteristic	Requirement	Test method
Non-volatile-matter, % mass fraction	min. 10,0[a]	ISO 1247-1:2021, Clause 8
Comparison of appearance	To match closely the appearance of paint prepared similarly from an agreed sample	ISO 1247-1:2021 Clause 10
Residue on 45 µm sieve, % mass fraction	max.1,0[a]	Clause 6
Water content, % mass fraction	max. 0,2[b]	ISO 1247-1:2021, Clause 14
Particle size distri-bution (instrumental method), µm	To be agreed between the interested parties	ISO 13320
Metallic impurities, % mass fraction on dry[c] pigment	To be agreed between the interested parties	ISO 1247-1:2021, Clause 17

[a] Alternative limits can be agreed between the interested parties.

[b] If hydrophilic solvent is used, the maximum value of water content can be 2 % mass fraction.

[c] The drying temperature refers to the drying temperature for non-volatile-matters in controlled conditions.

5 Sampling

Take a representative sample of the product to be tested in accordance with ISO 15528.

6 Determination of residue on sieve

6.1 Reagents

6.1.1 Liquid, with a solvent (6.1.2) content of 60 % to 95 % mass fraction.

6.1.2 Solvent, compatible to the solvent present in the VMP, such as a polar solvent as 2-butoxyethanol (CAS-No 111-76-2[1)]), isopropanol (CAS-No 67-63-0), acetates, or other appropriate polar solvent.

6.2 Apparatus

6.2.1 Containers, three, of suitable size to accommodate the sieve.

6.2.2 Beaker, 400 ml.

6.2.3 Test sieve of nominal aperture 45 µm (see 6.3.1).

6.2.4 Sintered glass filter, of porosity grade P 16 (pore size index 10 µm to 16 µm).

1) CAS-No — Chemical Abstracts Service Registry Number