International Standard 787/9

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General methods of test for pigments and extenders — Part 9 : Determination of pH value of an aqueous suspension

Méthodes générales d'essai des pigments et matières de charge — Partie 9 : Détermination du pH d'une suspension aqueuse

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 787/9 was developed by Technical Committee ISO/TC 35, *Paints and varnishes*, and was circulated to the member bodies in November 1979.

It has been approved by the member bodies of the following countries :

Australia	Ireland	Romania
Austria	Israel	South Africa, Rep. of
Brazil	Italy	Spain
Canada	Kenya	Sweden
China	Korea, Rep. of	Switzerland
France	Netherlands	United Kingdom
Germany, F. R.	Norway	USSR
India	Poland	

No member body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 787/9-1970, of which it constitutes a technical revision.

Printed in Switzerland

The purpose of this International Standard is to establish a series of general test methods for pigments and extenders which are suitable for all or many of the individual pigments and extenders for which specifications might be required. In such cases, a cross-reference to the general method should be included in the International Standard relating to that pigment or extender, with a note of any detailed modifications which might be needed in view of the special properties of the product in question.

Technical Committee ISO/TC 35, *Paints and varnishes*, decided that all the general methods should be published as they become available, as parts of a single International Standard, in order to emphasize the relationship of each to the whole series.

The Technical Committee also decided that, where two or more procedures were widely used for determining the same or a similar characteristic of a pigment or extender, there would be no objection to including more than one of them in the ISO series. In such cases it will, however, be essential to state clearly in a specification which method is to be used and, in the test report, which method has been used.

Parts of the series already published are as follows :

Part 1 : Comparison of colour of pigments
Part 2 : Determination of matter volatile at 105 °C
Part 3 : Determination of matter soluble in water — Hot extraction method
Part 4 : Determination of acidity or alkalinity of the aqueous extract
Part 5 : Determination of oil absorption value
Part 6 : Determination of residue on sieve — Oil method
Part 7 : Determination of residue on sieve — Water method — Manual procedure
Part 8 : Determination of matter soluble in water — Cold extraction method
Part 9 : Determination of pH value of an aqueous suspension
Part 10 : Determination of density — Pyknometer method
Part 11 : Determination of tamped volume and apparent density after tamping
Part 13 : Determination of water-soluble sulphates, chlorides and nitrates
Part 14 : Determination of resistivity of aqueous extract
Part 15 : Comparison of resistance of coloured pigments of similar types to light from a specified light source
Part 16 : Comparison of relative tinting strength (or equivalent colouring value) and colour on reduction in linseed stand oil using the automatic muller
Part 17 : Comparison of lightening power of white pigments
Part 18 : Determination of residue on sieve — Water method — Mechanical flushing procedure
Part 19 : Determination of water-soluble nitrates — Salicylic acid method
Part 20 : Comparison of ease of dispersion — Oscillatory shaking method
Part 21 : Comparison of heat stability of pigments using a stoving medium
Part 22 : Comparison of resistance to bleeding of pigments
Part 23 : Determination of density (using a centrifuge to remove entrained air)
Part 24 : Determination of relative tinting strength of coloured pigments and relative scattering power of white pigments — Photometric method

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General methods of test for pigments and extenders — Part 9 : Determination of pH value of an aqueous suspension

0 Introduction

This document is a part of ISO 787, *General methods of test for pigments and extenders.*

1 Scope and field of application

This part of ISO 787 specifies a general method of test for determining the pH value of an aqueous suspension of a sample of pigment or extender.

NOTE — When this general method is applicable to a given pigment or extender, only a cross-reference to it should be included in the International Standard relating to that pigment or extender, with a note of any detailed modification which may be needed in view of the special properties of the material in question. Only when this general method is not applicable to a particular material should a special method for determination of pH value be specified.

2 Reference

ISO 842, *Raw materials for paints and varnishes — Sampling.*

3 Reagent

Freshly distilled water, boiled before use to remove carbon dioxide, or water otherwise prepared of at least equivalent purity.

The water shall be boiled and cooled in a vessel made of chemically resistant glass, immediately before use. It shall be boiled for 5 to 10 min only, in order to avoid an increase of its pH value due to alkali dissolved from the glass vessel. Because water rapidly absorbs carbon dioxide, the cooled water shall be protected from access to the atmosphere and shall be stored for not more than 30 min. The closed container should be protected by a soda asbestos tube or similar device.

4 Apparatus

4.1 Glass container, of capacity 50 ml, made of chemically resistant glass, fitted with a ground glass or rubber stopper.

Before using the container for the first time, boil dilute hydrochloric acid placed in the container and then rinse it thoroughly with distilled water. The rubber stopper shall not have been used for any other purpose.

4.2 pH measuring device, capable of measurement to 0,1 unit, calibrated against buffer solutions of known pH value at the temperature of the test.

4.3 Balance, with an appropriate accuracy.

5 Sampling

Take a representative sample of the material to be tested as described in ISO 842.

6 Procedure

Carry out the determination in duplicate at room temperature.

Prepare a 10 % (m/m) suspension of the material under test, using the distilled water (clause 3), in the glass container (4.1). Stopper the container and shake it vigorously for 1 min. Allow it to stand for 5 min, remove the stopper and determine, to the nearest 0,1 unit, the pH value of the suspension.

If the material does not disperse easily in water, a wetting agent should be used; in the case of materials not soluble in ethanol, up to 5 ml of ethanol may be used but care should be taken to ensure that the minimum quantity is used and that it is neutral and free from pyridine. In the case of pigments soluble in ethanol, a neutral non-ionic wetting agent such as 10 ml of a 0,01 % (m/m) solution of an ethylene oxide condensate should be used. The neutrality of the wetting agent should be checked by making a blank determination. If a wetting agent is used, the volume of the water should be reduced so that a 10 % (m/m) suspension is obtained.

The type and quantity of wetting agent used shall be stated in the test report.

NOTE — With pigments and extenders of relatively low density, it may be necessary to use a suspension of less than 10 % (m/m). In such cases the concentration of the suspension used should be stated in the test report.

Record the pH values to the nearest 0,1 unit and record the temperature of the suspension to the nearest 1 °C. If the duplicate determinations of pH differ by more than 0,3 unit, the procedure shall be repeated.