
**Extenders — Specifications and
methods of test —**

**Part 16:
Aluminium hydroxides**

Matières de charge — Spécifications et méthodes d'essai —

Partie 16: Alumines hydratées

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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 document 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).

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This document was prepared by Technical Committee ISO/TC 256, *Pigments, dyestuffs and extenders*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 298, *Pigments and extenders*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 3262-16:2000), which has been technically revised.

The main changes are as follows:

- the first part of the title has been changed to “Extenders”;
- the normative references have been updated.

A list of all parts in the ISO 3262 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 www.iso.org/members.html.

Extenders — Specifications and methods of test —

Part 16: Aluminium hydroxides

1 Scope

This document specifies requirements and corresponding methods of test for aluminium hydroxides.

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

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

ISO 787-9, *General methods of test for pigments and extenders — Part 9: Determination of pH value of an aqueous suspension*

ISO 787-11, *General methods of test for pigments and extenders — Part 11: Determination of tamped volume and apparent density after tamping*

ISO 787-14, *General methods of test for pigments and extenders — Part 14: Determination of resistivity of aqueous extract*

ISO 5794-1, *Rubber compounding ingredients — Silica, precipitated, hydrated — Part 1: Non-rubber tests*

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18451-1 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 <https://www.electropedia.org/>

3.1

aluminium hydroxide

material crystallized by the Bayer process, for instance, the main constituent of which is gibbsite, $\text{Al}(\text{OH})_3$

Note 1 to entry: Other constituents may be bayerite, $\text{Al}(\text{OH})_3$, and boehmite, $\text{AlO}(\text{OH})$, both of which are also regarded as aluminium hydroxide.

3.2

crystallized aluminium hydroxide

aluminium hydroxide crystallized directly with the particle size distribution required for the application

3.3

ground aluminium hydroxide

aluminium hydroxide ground to the particle size distribution required and containing not only single crystals and agglomerates, but also the fragments of such crystals and agglomerates

4 Requirements and test methods

4.1 Essential requirements

For aluminium hydroxides complying with this document, the essential requirements are specified in [Table 1](#). The test methods listed in [Table 1](#) shall apply.

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Table 1 — Essential requirements

Characteristic	Unit	Requirement												Test method
		Low-electrolyte-content material, crystallized aluminium hydroxides			Low-electrolyte-content material, ground aluminium hydroxides			Standard material, crystallized aluminium hydroxides			Standard material, ground aluminium hydroxides			
		Grade A1	Grade A2	Grade A3	Grade B	Grade C1	Grade C2	Grade C3	Grade C4	Grade D1	Grade D2	Grade D3		
Residue on 63 µm sieve, max.	% mass fraction	To be agreed between the interested parties	To be agreed between the interested parties	0,1	To be agreed between the interested parties	To be agreed between the interested parties	To be agreed between the interested parties	To be agreed between the interested parties	0,1	To be agreed between the interested parties	To be agreed between the interested parties	0,5	ISO 787-7	
45 µm sieve, max.	% mass fraction			0,2					0,2			0,5		
Median particle size ^a	µm	>40	10 to 40	—	<10	>40	10 to 40	<10	—	10 to 40	<10	—	ISO 787-7 ^b	
Specific surface area, min.	m ² /g	—	—	3,0	—	—	—	—	3,0	—	—	3,0	ISO 5794-1	
Resistivity of aqueous extract, min.	Ω·m	100			66	50	40	30	10	40			ISO 787-14	
pH value of aqueous suspension		7 to 9			7 to 10			7 to 10			7 to 10			ISO 787-9
Matter volatile at 105 °C, max.	% mass fraction	0,2	0,3	0,5	0,4	0,2	0,3	0,4	1,0	0,3	0,4	1,0	ISO 787-2	
Apparent density after tamping	g/ml	>1,2	>0,6	0,4 to 0,7	0,6 to 1,2	>1,2	0,9 to 1,2	0,6 to 1,0	<0,6	>0,9	0,6 to 1,0	0,4 to 0,6	ISO 787-11	

^a The median particle size is defined as the mesh aperture in µm of the sieve through which 50 % of the product will pass.

^b Or any other test method giving the same results.

4.2 Conditional requirements

Requirements for the lightness of aluminium hydroxides shall be agreed between the interested parties. The test method used to determine the lightness shall also be agreed between the interested parties.

5 Sampling

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

6 Test report

The test report shall contain at least the following information:

- a) all details necessary to identify the product tested;
- b) a reference to this document, i.e. ISO 3262-16:2023;
- c) the results of the test, the method used, and whether the product complies with the relevant specification limits;
- d) any deviation from the method of test specified;
- e) any unusual features (anomalies) observed during the test;
- f) the date of the test.

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