INTERNATIONAL STANDARD 3549

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Zinc dust pigment for paints

Poussière de zinc pour peintures

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FOREWORD

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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 3549 was drawn up by Technical Committee ISO/TC 35, *Paints and varnishes,* and circulated to the Member Bodies in October 1974.

It has been approved by the Member Bodies of the following countries :

Austria	Israel	Spain
Brazil	Netherlands	Sweden
Bulgaria	New Zealand	Switzerland
Czechoslovakia	Poland	Turkey
France	Portugal	United Kingdom
Iran	Romania	Yugoslavia
Ireland	South Africa, Rep. of	

The Member Body of the following country expressed disapproval of the document on technical grounds :

Germany

Printed in Switzerland

Zinc dust pigment for paints

0 INTRODUCTION

This International Standard deals with zinc dust pigment for use in protective coatings. The material complying with this International Standard is quite suitable for the usual types of zinc paint but it does not necessarily cover the requirements of industries other than the paint industry. The possibility of including a requirement for particle size has been carefully considered, and it has been decided to include a clause that particle size distribution limits may be specified but both the method and limits should be agreed between the interested parties. With regard to the analytical methods given in this International Standard, more up-to-date methods such as atomic absorption methods are currently being developed by Technical Committee ISO/TC 18, *Zinc and zinc alloys,* and Technical Committee ISO/TC 35; when these are finalized, they may be included in any future revision. Meanwhile, such methods may be used by agreement between the interested parties.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies requirements for zinc dust pigment manufactured by a distillation process, suitable for use in protective coatings. It does not cover zinc pigments of other physical form such as zinc flake, as this would make the document unduly complex.

2 REFERENCES

ISO 713, *Zinc — Determination of lead and cadmium contents — Polarographic method.*

ISO 714, *Zinc — Determination of iron content — Photometric method.*

ISO 787/XVIII, *General methods of test for pigments — Part XVIII : Determination of residue on sieve by a mechanical flushing procedure.*

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

ISO 2590, *General method for the determination of arsenic — Silver diethyldithiocarbamate photometric method.*

3 REQUIRED CHARACTERISTICS AND THEIR TOLERANCES

Zinc dust pigment for paints shall have the characteristics shown in table 1.

TABLE 1 — **Composition of zinc dust pigment**

Characteristic	**Requirement** % (*m/m*)	**Test method**
Total zinc content expressed as zinc (Zn)	98 min.	Clause 6
Metallic zinc content (Zn)	94 min.	Clause 7 or 8; the particular method to be agreed between the interested parties
Lead (Pb)	0,2 max.	ISO 713 and clause 9[1)]
Cadmium (Cd)	0,2 max.	ISO 713 and clause 9[1)]
Iron (Fe)	0,2 max.	ISO 714 and clause 10[1)]
Arsenic (As)	0,000 4 (4 mg/kg) max.	ISO 2590 and clause 11
Matter insoluble in acid	0,2 max.	Clause 12

1) or other suitable methods such as atomic absorption methods, as agreed between the interested parties.

NOTE — If the zinc oxide content is required, this should be calculated from the difference between the total zinc content and the metallic zinc content.

4 RESIDUE ON SIEVE AND PARTICLE SIZE [OPTIONAL]

The material shall meet the sieve residue requirements shown in table 2 when examined by the method described in ISO 787/XVIII, or other methods as agreed between the interested parties. A 50 g test portion should be used for the test.

If required, mean particle size or the particle size distribution may be specified but both the limits and the method shall be agreed between the interested parties.

TABLE 2 — **Residue on sieve requirements**

Nominal size of sieve aperture μm	**Residue on sieve** % max.
125	0
90	0,1
45	3,0

NOTE — For certain uses, zinc dust is required with lower residues on the 90 and 45 μm sieves than those shown in table 2. In these cases the residue on sieve limits should be agreed between the interested parties.

5 SAMPLING

A representative sample of the material shall be taken in accordance with ISO 842.

NOTE — It is pointed out that the sample should on no account be dried before testing and any portion of the sample not used should not be returned to the sample container.