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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Test Methods for Liquid Paint Driers¹

This standard is issued under the fixed designation D 564; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 These test methods cover the test procedures to be applied to liquid paint driers used in paints and related coatings. Typical paint driers, listed in Specification D 600, are carboxylates of lead, cobalt, manganese, zinc, iron, calcium, and zirconium.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- D 234 Specification for Raw Linseed Oil²
- D 235 Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)³
- D 600 Specification for Liquid Paint Driers³
- D 1544 Test Method for Color of Transparent Liquids (Gardner Color Scale)⁴
- D 1640 Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature⁴
- D 1644 Test Methods for Nonvolatile Content of Varnishes⁴
- D 2090 Test Method for Clarity and Cleanness of Paint and Ink Liquids²
- D 2373 Test Method for Determination of Cobalt in Paint Driers by EDTA Method⁴
- D 2374 Test Method for Lead in Paint Driers by EDTA Method⁴
- D 2375 Test Method for Manganese in Paint Driers by EDTA Method⁴
- D 2613 Test Method for Calcium or Zinc in Paint Driers by EDTA Method⁴
- D 3804 Test Method for Iron in Paint Driers by EDTA Method⁴

¹ These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.21 on Chemical Analysis of Paints and Paint Materials.

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² *Annual Book of ASTM Standards*, Vol 06.03.

³ *Annual Book of ASTM Standards*, Vol 06.04.

⁴ *Annual Book of ASTM Standards*, Vol 06.01.

D 3924 Specifications for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Material⁴

D 3969 Test Method for Zirconium in Paint Driers by EDTA Method⁴

D 3970 Test Method for Cerium in Paint Driers by Oxidimetric Determination⁴

D 3980 Practice for Interlaboratory Testing of Paint and Related Materials⁴

D 3988 Test Method for Vanadium in Paint Driers by EDTA Method⁴

D 3989 Test Method for Total Rare Earth Metals in Paint Driers by EDTA Method⁴

3. Significance and Use

3.1 Driers accelerate the drying of oil, paint, printing ink, and varnish.

3.2 These test methods are applicable to liquid driers manufactured for use in paints and related coatings.

3.3 The tests for metallic content using ethylenediaminetetraacetic acid dihydrate (EDTA) are intended for concentrated solutions of single metals; two or more metals may cause interference.

4. Physical Tests

4.1 *Sampling*—Sample in accordance with Practice D 3980.

4.2 *Conditioning*—Follow Specification D 3924 except where other temperatures are specified.

4.3 *Appearance*—After conditioning overnight at room temperature (see Specification D 3924) examine the drier without aid of magnification for clarity and cleanness and for presence of foreign matter, sediment, skins, turbidity or haziness, in accordance with Test Method D 2090.

4.4 *Sediment or Suspended Matter*—If sediment or suspended matter is observed, proceed as follows:

4.4.1 Weigh to 1 mg, by difference, 1 to 5 g of drier into a tared 10 to 15- μ m fritted-glass crucible. After most of the drier has passed through wash with mineral spirits conforming to Specification D 235 and dry at 50°C until the weight is constant to 1 mg. Calculate the difference in weight and report as percent sediment in the drier.

4.5 *Color*—Determine color in accordance with Test Method D 1544.