



~~Designation: D3724-82 (Reapproved 1995)^{ε1}~~ Designation: D 3724 – 01 (Reapproved 2007)

Standard Specification for Synthetic Brown Iron Oxide Pigment¹

This standard is issued under the fixed designation D 3724; 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.

~~^{ε1}Note—Keywords were added editorially in May 1995.~~

1. Scope

1.1 This specification covers the pigments commercially known as synthetic pure brown iron oxides and blends. These pigments are suitable for use in paints and coatings. Methods of manufacture are:

1.1.1 Precipitation of iron salts.

1.1.2 Calcination of precipitated iron oxides.

1.1.3 Blends of synthetic red, yellow, and black iron oxides.

1.1.4 Blends of synthetic red, yellow, and black iron oxides plus the addition of carbon black to a maximum of 5.0 %. Small amounts of carbon black are added to obtain tinting colors not obtainable when synthetic brown iron oxide or carbon black are used singly.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*²

D 50 Test Methods for Chemical Analysis of Yellow, Orange, Red, and Brown Pigments Containing Iron and Manganese

~~D 185 Test Methods for Coarse Particles in Pigments, Pastes, and Paints²~~ Test Methods for Coarse Particles in Pigments

D 280 Test Methods for Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments

D 387 Test Method for Color and Strength of ~~Color~~ Chromatic Pigments with a Mechanical Muller

D 1208 Test Methods for Common Properties of Certain Pigments

D 3872 Test Method for Ferrous Iron in Iron Oxides

E 350 Test Methods for Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

E 351 Test Methods for Chemical Analysis of Cast ~~Iron—All Iron~~ All Iron Types

3. Composition and Properties

3.1 The pigment shall be a manufactured iron oxide or a blend. It shall be a soft dry finely pulverized pigment and shall conform to the following requirements:

FeO	0 to 10 %
Fe ₂ O ₃	83 to 98 %
Carbon black, max, %	5.0 %
Moisture and other volatile matter, max, %	1.0 %
Organic coloring matter	none
Total sulfates expressed as SO ₃ , max, %	2.0 %
Coarse particles (total residue retained on No. 325 (45- μ m) mesh sieve, max, %	1.0 %
Matter soluble in water, max, %	0.5 %

3.2 Inasmuch as synthetic brown iron oxides are available in a wide range of shades. The mass color and character of the tint and the tinting strength formed by a mixture with a white pigment shall be within mutually agreed upon limits of a standard acceptable to both the purchaser and the seller when tested by Test Method D 387.

¹ This specification is under the jurisdiction of ASTM Committee ~~D-HD01~~ D-HD01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.31 on Pigment Specifications.

Current edition approved ~~Oct. 29, 1982~~ Nov. 1, 2007. Published ~~January 1983~~ November 2007. Originally published as ~~D3724-78~~ D3724-78 approved in 1978. Last previous edition ~~D3724-78~~ D3724-78 approved in 2001 as D 3724 – 01.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* ~~Vol 06.03~~ Volume 06.03 volume information, refer to the standard's Document Summary page on the ASTM website.