~~Designation:D4139–82(Reapproved1999)~~ Designation: D 4139 – 04 (Reapproved 2009)

Standard Guide for Determining Volatile and Nonvolatile Content of Pigments[1]

This standard is issued under the fixed designation D 4139; 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.

1. Scope

1.1 This guide is intended to aid in the selection of the proper ASTM test method for determining the volatile and nonvolatile content of pigments.

NOTE 1—Test methods for determining the composition of the volatile fraction are not covered by this guide.

1.2 The standards included are as follows:

Standard	Section	ASTM Designation
Inert or low hiding pigments	4.1	D 280
White pigments	4.2	D 280
Black pigments	4.3	D 280
		D 1509
Aluminum and zinc pigments	4.4	D 280
		D 480
Blue pigments	4.5	D 280
		D 1135
Green pigments	4.6	D 280
Yellow, orange, brown pigments	4.7	D 280
		~~D 3724~~
		~~D 763~~
		D 763 D 3724
Red pigments	4.8	D 280
Miscellaneous	4.9	

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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

D 480 Test Methods for Sampling and Testing of Flaked Aluminum Powders and Pastes

D763~~Specification for Raw and Burnt Umber Pigments~~[2]

~~D~~ 1135 Test Methods for Chemical Analysis of Blue Pigments

D 1509 ~~Test Method for Carbon Black—Heating Loss~~

Test Methods for Carbon BlackHeating Loss

D 3724 Specification for Synthetic Brown Iron Oxide Pigment

3. Significance and Use

3.1 The nonvolatile content of raw materials may be used to determine the total nonvolatile content (solids) of paint and related coatings. Such information may be useful to coatings producers and users for the determination of the total solids available for film formation and for the estimation of the volatile organic content.

4. Procedure

4.1 *Inert or Low Hiding Pigments* :

4.1.1 Test Methods D 280 contain Method A for pigments that do not decompose at ~~110°C and uses~~ 110°C, using a time of 2

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

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[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 information, refer to the standard's Document Summary page on the ASTM website.