This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D520 – 00 (Reapproved 2019)

Standard Specification for Zinc Dust Pigment[1]

This standard is issued under the fixed designation D520; 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 U.S. Department of Defense.

1. Scope

1.1 This specification covers three types of zinc dust, for use as a pigment in paints.

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

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B214 Test Method for Sieve Analysis of Metal Powders

D185 Test Methods for Coarse Particles in Pigments

D521 Test Methods for Chemical Analysis of Zinc Dust (Metallic Zinc Powder)

E40 Method for Chemical Analysis of Slab Zinc (Spelter) (Withdrawn 1993)[3]

3. Composition and Properties

3.1 The pigments shall consist substantially of metallic zinc and shall conform to the requirements for composition prescribed in Table 1.

3.2 In such physical properties as are specified by the purchaser, the pigment shall satisfactorily match a reference sample mutually agreed upon between the purchaser and the seller.

4. Sampling

4.1 Two samples shall be taken at random from different packages from each lot, batch, day's pack, or other unit of production in a shipment. When no markings distinguishing between units of production appear, samples shall be taken from different packages in the ratio of two samples for each 5000 kg (10 000 lb), except that for shipments of less than 5000 kg, two samples shall be taken. At the option of the purchaser, the samples may be tested separately or after blending in equal quantities the samples from the same production unit to form a composite sample.

5. Test Methods

5.1 Tests shall be conducted in accordance with the following ASTM test methods. Test procedures not covered by these ASTM test methods shall be mutually agreed upon between the purchaser and the seller.

5.1.1 *Total and Metallic Zinc*—Test Methods D521.

5.1.2 *Lead, Cadmium, and Iron*—Sections 8, 18.2, and 22, respectively, of Test Methods E40.

5.1.3 *Oily or Fatty Matter, or Both*—Test Methods D521.

5.1.4 *Coarse Particles*—Test Method B214 or Test Methods D185.

6. Keywords

6.1 pigment; zinc

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

Current edition approved May 1, 2019. Published May 2019. Originally approved in 1939. Last previous edition approved in 2011 as D520 – 00 (2011). DOI: 10.1520/D0520-00R19.

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

[3] The last approved version of this historical standard is referenced on www.astm.org.

TABLE 1 Requirements for Composition

	Type I	Type II	Type III
Total zinc, calculated as Zn, min, %	97.5	98.0	99.0
Metallic zinc, min, %	94.0	94.0	96.0
Material other than metallic zinc, ZnO, and admixed CaO, where applicable max %	0.75	...	...
Calcium, calculated as CaO, max, %	0.7	0.7	...
Lead, calculated as Pb, max, %	...	0.01	0.002
Iron, calculated as Fe, max, %	...	0.02	0.002
Cadmium, calculated as Cd, max, %	...	0.01	0.001
Chlorine, calculated as Cl, max, %	...	0.01	...
Sulfur, calculated as SO_2, max, %	...	0.01	...
Moisture and other volatile matter, max, %	0.10	0.10	0.10
Oily or fatty matter, or both, max, %	...	0.05	...
Zinc oxide (ZnO), max, %	6.0	remainder	remainder
Coarse particles, max, %:			
Total residue retained on a 150-µm (No. 100) sieve	none	0.1	0.1
Total residue retained on a 75-µm (No. 200) sieve	...	0.8	0.8
Total residue retained on a 45-µm (No. 325) sieve	4.0	3.0	3.0

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: (978) 646-2600; http://www.copyright.com/