



Standard Specification for Calcium Chloride¹

This standard is issued under the fixed designation D 98; 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 This specification covers calcium chloride, technical grade, typically used for, but not limited to, dust control, stabilization, ice/snow removal, other road-conditioning purposes, acceleration of the set of concrete, and as a desiccant.

1.2 The values stated in SI units are to be regarded as the standard.

1.3 For purposes of determining conformance to this specification, values for chemical analysis shall be rounded to the nearest 0.1 %, and values for grading shall be rounded to the nearest 1 %, in accordance with the rounding method in Practice E 29.

1.4 The text of this standard references notes and footnotes, which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 ASTM Standards:

D 345 Test Method for Sampling and Testing Calcium Chloride for Roads and Structural Applications²

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications³

E 449 Test Methods for Analysis of Calcium Chloride⁴

2.2 Federal Standards:⁵

UU-S-48 Sack, Shipping, Paper

PPP-B-35 Bag, Textile, Shipping, Burlap, Cotton, and Waterproof Laminated

PPP-C-186 Containers, Packaging and Packing for Drugs, Chemicals, and Pharmaceuticals

PPP-D-723 Drum, Fiber

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)

2.3 Military Standards:⁵

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-129 Marking for Shipment and Storage

2.4 American Trucking Associations, Inc.:⁶

National Motor Freight Classification

2.5 Uniform Classification Committee:

Uniform Freight Classification⁷

3. Classification

3.1 *Type*—Two types of calcium chloride are covered as follows:

3.1.1 *Type S (Solid)*—Flake, pellet or granular calcium chloride (CaCl₂) in varying concentrations.

3.1.2 *Type L (Liquid)*—Water solutions of calcium chloride in varying concentrations.

3.2 *Concentrations*—Concentrations of Type S and Type L calcium chloride shall be expressed as a percentage of the total. Type S shall be further expressed as Grades as in 3.3 and in accordance with the chemical requirements of this specification.

3.2.1 The concentrations of Type S (solid) calcium chloride are 77, 90, and 94 % minimum.

3.2.2 The concentrations of Type L (liquid) calcium chloride shall be specified by the purchaser (see Note 1).

NOTE 1—Typical concentrations vary from 30 to 45 %.

3.3 *Grades*—Type S (solid) calcium chloride is graded as follows:

3.3.1 *Grade 1*, is 77 % minimum calcium chloride concentration of either Class A—Flake, or Class B—Granular.

3.3.2 *Grade 2*, is 90 % minimum calcium chloride concentration of Class A—Flake, Class B—Pellet, Class C—Granular, or Class D—Powder.

3.3.3 *Grade 3* is 94 % minimum calcium chloride concentration of Class A—Flake, Class B—Pellet, Class C—Granular, or Class D—Powder.

4. Ordering Information

4.1 Orders for material under this specification shall include the following information:

4.1.1 This specification designation and date of issue,

4.1.2 Type S (solid) or Type L (liquid) concentration, grade

¹ This specification is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials, and is the direct responsibility of Subcommittee D04.31 on Calcium and Sodium Chlorides.

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² Annual Book of ASTM Standards, Vol 04.03.

³ Annual Book of ASTM Standards, Vol 14.02.

⁴ Annual Book of ASTM Standards, Vol 15.05.

⁵ Available from Standardization Documents Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁶ Available from American Trucking Association, Inc., 1616 P St., N. W., Washington DC 20036.

⁷ Available from Uniform Classification Committee, 212 Union Station, Chicago, IL 60606.