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: D6284 – 17

Standard Test Method for Rubber Property—Effect of Aqueous Solutions with Available Chlorine and Chloramine[1]

This standard is issued under the fixed designation D6284; 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 test method covers procedures for evaluating the ability of rubber and rubber-like materials to withstand the effects of aqueous solutions with available chlorine and chloramine. It is intended to compare the effects of chlorine compounds, present in potable water due to disinfection procedures, on rubber articles.

1.2 Test solutions are designed to contain chlorine compounds, including hypochlorous acid (HOCl), hypochlorite ions (OCl), and monochloramine (NH_2Cl).

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

1.4 *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.*

1.5 *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]

D471 Test Method for Rubber Property—Effect of Liquids
D1193 Specification for Reagent Water
D1253 Test Method for Residual Chlorine in Water
D1415 Test Method for Rubber Property—International Hardness
D2240 Test Method for Rubber Property—Durometer Hardness
D3182 Practice for Rubber—Materials, Equipment, and Procedures for Mixing Standard Compounds and Preparing Standard Vulcanized Sheets
D3183 Practice for Rubber—Preparation of Pieces for Test Purposes from Products
D4483 Practice for Evaluating Precision for Test Method Standards in the Rubber and Carbon Black Manufacturing Industries
D6284 Test Method for Rubber Property—Effect of Aqueous Solutions with Available Chlorine and Chloramine
D6855 Test Method for Determination of Turbidity Below 5 NTU in Static Mode

3. Terminology

3.1 The terminology of chlorine compounds used in this test method is in accordance with Test Method D1253, Section 7.

3.2 *combined residual chlorine*—residual consisting of chlorine combined with ammonia nitrogen and nitrogenous compounds.

3.3 *free available chlorine residual*—residual consisting of hypochlorite ions (OCI) or hydrochlorous acid (HOCl), or both.

3.4 *total residual chlorine (chlorine residual)*—the amount of available chlorine-induced oxidants present in water at any specified period, subsequent to the addition of chlorine.

4. Summary of Test Method

4.1 This test method provides procedures for exposing test pieces to aqueous available chlorine and chloramine solutions under defined conditions of temperature and time.

4.2 This test method includes the following procedures:

Change in mass after immersion	Section 10
Change in volume after immersion	Section 11
Change in hardness after immersion	Section 12
Visual and turbidity rating after immersion	Section 13

4.3 The resulting deterioration is measured by changes in mass, volume, hardness, and appearance of the test piece surfaces and test liquid after immersion.

[1] This test method is under the jurisdiction of ASTM Committee D11 on Rubber and Rubber-like Materials and is the direct responsibility of Subcommittee D11.40 on Consumer Rubber Products.

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

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