



Standard Methods of Test for RESIDUAL CHLORINE IN WASTE WATER¹

This standard is issued under the fixed designation D 1427; 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.

1. Scope and Application

1.1 These methods cover procedures for the determination of residual chlorine in waste water. Methods A, B, and C for the determination of residual chlorine in water other than that containing waste are given in ASTM Methods D 1253, Test for Residual Chlorine in Water.² Provision is made in these methods for the determination of total chlorine and free available chlorine. Provision is also made for the determination of the total chlorine in the presence of most of the interfering constituents found in waste water, either through choice of the method employed or by a modification of the same. Two methods are given, as follows:

	Sections
Method A (Starch-Iodide Titration Method)	6 to 11
Method B (Amperometric Titration Method)	12 to 20

1.2 Both methods are applicable to the determination of total chlorine in waste water. Only Method B is applicable to the determination of free available chlorine in waste water.

1.3 The type of residual chlorine to be determined depends on the objective of chlorination. When a free chlorine residual is not required, a determination of the total chlorine normally suffices regardless of the composition of the chlorine residual.

1.4 Modifications of these methods are provided to eliminate one or more interferences present either initially in the industrial waste water or present subsequent to chlorination. The methods are most dependable when

used with waste water of known composition.

2. Definitions

2.1 The terms *residual chlorine* (*chlorine residual*), *total chlorine residual*, and *free available chlorine residual*, in these methods are defined in accordance with ASTM Definitions D 1129, Terms Relating to Water,² as follows:

2.1.1 *residual chlorine* (*chlorine residual*)—the amount of available chlorine present in industrial water at any specified period, subsequent to the addition of chlorine.

2.1.2 *total chlorine residual*—total amount of chlorine residual present, without regard to type.

2.1.3 *free available chlorine residual*—residual consisting of hypochlorite ions (OCl), hypochlorous acid (HOCl), or a combination thereof.

2.2 For definitions of other terms used in these methods, refer to Definitions D 1129.

3. Purity of Reagents

3.1 Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society,

¹ These methods are under the jurisdiction of ASTM Committee D-19 on Water.

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² *Annual Book of ASTM Standards*, Part 31.