



Standard Test Method for Hydrolyzable Chlorine Compounds in Chlorinated Aromatic Hydrocarbons (Askarels)¹

This standard is issued under the fixed designation D 1820; 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 the determination of hydrolyzable chlorine compounds in chlorinated aromatic hydrocarbons (askarels).

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

1.3 *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.*

2. Referenced Documents

2.1 ASTM Standards:

D 1193 Specification for Reagent Water²

3. Summary of Test Method

3.1 This test method is a quantitative potentiometric titration using silver nitrate in an essentially nonaqueous medium to determine chloride ions obtained after methanolic sodium hydroxide hydrolysis of unstable chlorine compounds in chlorinated aromatic hydrocarbons of the askarel dielectric class.

4. Significance and Use

4.1 The measured chloride ion, reported as parts per million in the askarel test specimen, is indicative of the relative stability of the askarel under prescribed conditions of test.

4.2 Many askarels contain polychlorinated biphenyls (PCBs). Manufacture and sale of PCBs have been prohibited by Federal regulation in the United States since 1978. The conditions for continued use, handling, and disposal of PCBs are also regulated. Users of this and other methods of measuring the properties of askarels containing PCBs are responsible for following applicable Federal, state and local regulations.

5. Interferences

5.1 The presence of compounds containing hydrolyzable halogen other than chlorine, that is, bromine and iodine, will give positive results, as will also any other foreign substance capable of forming an insoluble compound with silver nitrate. Such materials would not normally be present in an askarel.

5.2 The amount of chloride ions measured when the test is applied to normally stable askarels is very small, ranging from 0.1 to a few parts per million. Therefore, the test must be made in an area where the atmosphere is free from contaminating influences, and it is essential to make a simultaneous blank determination. The value obtained on the blank will indicate the degree to which the test environment, reagents, and glassware are satisfactory for this type of testing.

6. Apparatus

6.1 *Magnetic Stirrer*, with speed control.

6.2 *Magnetic Stirring Bar*, one-piece molded, TFEfluorocarbon covered.

6.3 *Microburet*, 1.0-mL capacity, graduated in 0.01-mL divisions.

6.4 *Electrode, Silver*.³

NOTE 1—Although the silver billet-glass electrode system is preferred, a silver electrode with a mercurous sulfate reference electrode may be used. However, a silver-silver chloride electrode system should not be used.

6.5 *Electrode, Standard Glass*.³

6.6 *Potentiometer*,⁴ suitable for use with the glass electrode.

6.7 *Water Bath*, individual glass, 150 mm in diameter and 75 mm high to hold 600 mL of water conveniently.

7. Reagents and Materials

7.1 *Purity of Reagents*—Use reagent grade chemicals in all tests. Unless otherwise indicated, it is intended that all reagents

¹ This test method is under the jurisdiction of ASTM Committee D-27 on Electrical Insulating Liquids and Gases and is the direct responsibility of Subcommittee D27.06 on Chemical Tests.

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² *Annual Book of ASTM Standards*, Vol 10.01.

³ Beckman Catalog No. 39261 silver billet electrode and Catalog No. 40498 glass electrode have been found satisfactory for this purpose.

⁴ Beckman GS or Zeromatic and Leeds & Northrup pH meter have been found satisfactory for this purpose.