



Standard Test Method for Determination of Organochlorine Pesticides in Water by Capillary Column Gas Chromatography¹

This standard is issued under the fixed designation D 5812; 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.

ε¹ NOTE—Editorial changes were made in July 2002.

1. Scope

1.1 This test method covers the capillary gas chromatographic determination of various organochlorine pesticides, including some of their degradation products and related compounds in finished drinking water. This test method is not limited to this particular aqueous matrix; however, its applicability to other aqueous matrices must be determined. The tested compounds include the following:

Pesticide	Chemical Abstract Service Registry Number ^A
Aldrin	309-00-2
α-BHC	319-84-6
β-BHC	319-85-7
γ-BHC	319-86-8
δ-BHC	58-89-9
α-Chlordane	5103-71-9
γ-Chlordane	5103-74-2
Chlorobenzilate	501-15-6
Chloroneb	2675-77-6
Chlorothalonil	2921-88-2
DCPA	1897-45-6
4,4'-DDD	72-54-8
4,4'-DDE	72-55-9
4,4'-DDT	50-29-3
Dieldrin	60-57-1
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan sulfate	1031-0708
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Etridiazole	2593-15-9
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Hexachlorobenzene	118-74-1
Methoxychlor	72-43-5
cis-Permethrin	52645-53-1
trans-Permethrin	52645-53-1
Propachlor	1918-16-7
Trifluralin	1582-09-8

^A Numbering system of CAS Registry Services, P.O. Box 3343, Columbus, OH 43210-0334.

¹ This test method is under the jurisdiction of ASTM Committee D-19 on Water and is the direct responsibility of Subcommittee D19.06 on Methods for Analysis for Organic Substances in Water.

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1.2 Table 1 and Table 2 list the applicable concentration ranges and precision and bias statements for this test method. The applicability of this test method to other compounds must be demonstrated.

1.3 The extract derived from this procedure may be analyzed for these constituents by using the gas chromatography (GC) conditions prescribed in Test Method D 5175 (capillary column). Although the columns used in this test method may be adequate for analyzing PCBs, no data were collected for any multi-congener constituents during methods development.

1.4 This test method is restricted to use by or under the supervision of analysts experienced in the use of GC and interpretation of gas chromatograms. Each analyst must demonstrate the ability to generate acceptable results using the procedures described in Section 12.

1.5 Analytes that are not separated chromatographically by either the primary or secondary chromatographic columns (for example, analytes having very similar retention times) cannot be identified and measured individually in the same calibration mixture or water sample unless an alternative technique for identification and quantitation exists (see 7.9 and 13.4).

1.6 When this test method is used to analyze unfamiliar samples for any or all of the analytes listed in 1.1, analyte identifications and concentrations should be confirmed by at least one additional technique.

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

1.8 *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.* Specific hazards statements are given in Section 9.

2. Referenced Documents

2.1 ASTM Standards:

D 1129 Terminology Relating to Water²

D 1192 Specification for Equipment for Sampling Water

² Annual Book of ASTM Standards, Vol 11.01.