

Method for

# Laboratory evaluation of disinfectant activity of quaternary ammonium compounds by suspension test procedure

# Co-operating organizations

The Disinfectants Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- Admiralty
- Association of British Chemical Manufacturers
- Association of Hospital Management Committees
- British Disinfectant Manufacturers' Association\*
- London County Council
- Ministry of Health\*
- Royal Society for the Promotion of Health\*
- War Office

The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- Association of Public Analysts
- D.S.I.R.-Laboratory of the Government Chemist
- Medical Research Council
- Ministry of Agriculture, Fisheries and Food
- National Institute for Research in Dairying
- School of Pharmacy, University of London
- Society for Applied Bacteriology
- Society of Chemical Industry

This British Standard, having been approved by the Disinfectants Industry Standards Committee and endorsed by the Chairman of the Chemical Divisional Council, was published under the authority of the General Council on 30 November 1960

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The following BSI references relate to the work on this standard:  
Committee reference DIC/3  
Draft for comment A(DIC) 858

ISBN 0 580 35639 6

## Amendments issued since publication

| Amd. No. | Date | Comments |
|----------|------|----------|
|          |      |          |
|          |      |          |
|          |      |          |
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## Foreword

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 3000, indexed and cross-indexed for reference, together with an abstract of each standard, will be found in the Institution's Yearbook.

The test procedure described in this British Standard is designed to enable a similar *modus operandi* to be used in every laboratory evaluating the disinfectant activity of quaternary ammonium compounds and formulations containing them. The procedure comprises a prescribed laboratory technique within which may be selected test conditions appropriate for any particular purpose.

In the present state of knowledge no laboratory test, or series of tests, can be devised which will give a reliable index of disinfectant capacity applicable to every condition of use; only a field evaluation under practical conditions can give this information.

The procedure is intended, and is designed, simply for assessing the disinfectant activities of quaternary ammonium compounds and their formulations in the laboratory under any selected conditions by a prescribed suspension technique. The conditions chosen should take into account such factors as ranges of temperature, contact time, organisms, total solids and the varying characteristics of water supplies which the product may be expected to meet when in use, all of which may influence the bactericidal activity. Within any given set of variables, the procedure can be used for grading or comparing various quaternary ammonium compounds, or their formulations, in terms of their relative disinfectant activities.

The results of any such comparison should be presented in the most convenient form, together with full data relative to each test or test series, and this British Standard includes examples of typical test conditions and results.

For preliminary screening it may be possible to decide on one temperature, one organism, one type of organic matter (if involved) and one contact time. Materials giving encouraging results can then be tested over a wider range of variables, preferably directed to the use of the preparations in practice.

The technique described is simple, the test conditions can be varied conveniently and reasonably reproducible results can be obtained. Moreover, whilst the technique provides results with organisms in suspension, these results can be used as an indication of the likely efficiency of preparations intended for the disinfection of smooth surfaces such as glass, steel or aluminium. Precise information regarding their action on semipermeable or less regular surfaces such as skin, wood, rubber and wool is best gained from specific tests with these materials.

In any laboratory assessment of disinfectant activity it is necessary to take into account the degree of repeatability of the test, i.e. the variations in results obtained in carrying out a series of tests within one laboratory, and the degree of reproducibility between different laboratories (see Clause 23). Extensive trials within the technique described have shown that the results obtained are reasonably reproducible, and that the reproducibility is stable under a variety of conditions.

As with other biological assays, the results obtained with any of the test details outlined should not be interpreted as an absolute measure of disinfectant activity; they may only apply to the particular conditions of the test used.

This British Standard is based on a procedure developed by the British Disinfectant Manufacturers' Association, and the British Standards Institution wishes to acknowledge the courtesy of the Association in making available the text of its method.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

