

LIMITATIONS OF THE PHENOL COEFFICIENT TEST

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Although designed especially for testing disinfectants, the phenol coefficient test is today being employed for three purposes: (1) for testing the germicidal efficiency of disinfectants; (2) for determining the germicidal values of pure chemical compounds; and (3) for estimating the value of antiseptics. Although the test should be employed for only the first named use, and limited to only phenol-like compounds, its application in the other fields has gradually developed in recent years.

The term "Phenol Coefficient" means the germicidal efficiency of a phenol-like disinfectant against *Bacillus Typhosus* as compared to pure phenol under the conditions of a special bacteriological test. The special procedure employed is the Rideal-Walker Test or one of its modifications, such as the Hygienic Laboratory Method or the Food and Drug Administration Method. The figure obtained by means of this test is used for two purposes: (1) as a specification figure for selecting disinfectants by the purchaser and (2) as a factor to be used in calculating the dilution to be made for use of such disinfectants in practice. Since five percent carbolic acid is generally recognized as a good germicide for use on inanimate objects, dilutions of disinfectants are made so that they will equal this standard germicide in bactericidal efficiency. This is done by multiplying the phenol coefficient figure by twenty. Such solutions of phenol-like compounds will kill all the various disease-producing microorganisms which are of epidemiologic importance. The phenol coefficient test serves a useful purpose in supplying this necessary information and is used for this purpose throughout the world. This is what the test is for and it should be limited to this use.

There are definite limitations to the phenol coefficient test which should be recognized by chemists, bacteriologists,

and others who are interested in germicides. Chemists who are engaged in making new germicides should not insist on changing the standard test to suit the compounds they make. Those chemists who are interested in antiseptics should become acquainted with the special tests which have been developed for this class of germicides. They should at the same time understand that the phenol coefficient test is not applicable to antiseptics and that the results of such tests, if made, could not be interpreted in any way which would even indicate the practical germicidal value of such preparations. The phenol coefficient is used specifically for determining the relative germicidal efficiency of phenol-like disinfectants as compared to pure phenol. The test was developed for this purpose and that is its special use now. When the limitations of the phenol coefficient test are generally recognized and appreciated by all who are interested in this important field, the present confusion will be eliminated.

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