T 509 om-02
SUGGESTED METHOD – 1968
OFFICIAL STANDARD – 1977
OFFICIAL TEST METHOD – 1983
REVISED – 1988
REVISED – 1996
REVISED – 2002

CAUTION:
This Test Method may include safety precautions which are believed to be appropriate at the time of publication of the method. The intent of these is to alert the user of the method to safety issues related to such use. The user is responsible for determining that the safety precautions are complete and are appropriate to their use of the method, and for ensuring that suitable safety practices have not changed since publication of the method. This method may require the use, disposal, or both, of chemicals which may present serious health hazards to humans. Procedures for the handling of such substances are set forth on Material Safety Data Sheets which must be developed by all manufacturers and importers of potentially hazardous chemicals and maintained by all distributors of potentially hazardous chemicals. Prior to the use of this method, the user must determine whether any of the chemicals to be used or disposed of are potentially hazardous and, if so, must follow strictly the procedures specified by both the manufacturer, as well as local, state, and federal authorities for safe use and disposal of these chemicals.

Hydrogen ion concentration (pH) of paper extracts (cold extraction method)

1. Scope

1.1 This method measures the hydrogen ion concentration of a cold aqueous extract (unfiltered) of paper, expressed in terms of pH value.

1.2 It is suitable for writing, printing, and sized industrial papers, but is not intended for unbuffered types such as insulating and condenser papers. The determined values may not be exact in a fundamental sense and should not be interpreted in terms of solution theory. The pH values are empirically correlated with end use requirements and paper qualities. This method avoids change of acidity or alkalinity resulting from heat-induced hydrolysis.

1.3 A hot water extraction method is described in TAPPI T 435, "Hydrogen Ion Concentration (pH) of Paper Extracts (Hot Extraction Method)."

1.4 Surface pH measurement of paper is described in TAPPI T 529, "Surface pH Measurement of Paper."

2. Summary

This method consists of a cold water (25 ± 5°C) extraction of the specimen for one hour followed by a pH measurement with a commercial pH meter.

3. Significance

The pH determination measures the extent to which the paper alters the hydrogen-hydroxyl equilibrium of pure water. The pH (acidity) may be important because of its effect on the permanence of the paper. Although the acidity may be determined as the amount of water soluble acidity by titration with alkali (TAPPI T 428 "Hot Water Extractable Acidity or Alkalinity of Paper"), the hydrogen ion concentration (pH) is more indicative of the stability of paper than is the total acidity.

Approved by the Standard Specific Interest Group for this Test Method
TAPPI