

Photometer Method

PHENOL (PHENOLTEST)

AUTOMATIC WAVELENGTH SELECTION

**TEST FOR PHENOL AND ORTHO/META
SUBSTITUTED PHENOLS IN NATURAL,
DRINKING AND INDUSTRIAL WASTE WATERS**

**0 – 5.0 mg/l
as Phenol**

Phenols and substituted phenols may occur in natural, drinking and industrial waste waters. Phenols are not readily removed from water by conventional water treatment processes. These compounds arise typically from oil and chemical refining, livestock dips, the breakdown of pesticides, human and animal wastes and from naturally occurring sources. Chlorination of such waters may produce odorous and objectionable-tasting chlorophenols.

The Palintest Phenoltest method provides a simple means of measuring the concentration of phenol and phenolic compounds present in water over the range 0 - 5.0 mg/l. The concentration of phenol determined in the test is due to unsubstituted and to ortho and meta substituted phenols. A proportion of para substituted phenols will give a positive response.

Method

In the Phenoltest method, phenol and phenolic compounds react with 4-amino-antipyrine in the presence of ferricyanide ions to form a red colour. The reagents are provided in tablet form and the test is carried out simply by adding the appropriate tablets to a sample of the water. A further tablet reagent is used to prevent interference due to metal ions.

The intensity of the red colour produced in the test is proportional to the concentration of phenolic compounds present in the sample and is measured using a Palintest Photometer.

Reagents and Equipment

Palintest Phenoltest No 1 Tablets

Palintest Phenoltest No 2 Tablets

Palintest Phenoltest PR Tablets

Palintest Automatic Wavelength Selection Photometer

Round Test Tubes, 10 ml glass (PT 595)

Test Procedure

- 1 Fill round test tube to the 10 ml mark with sample.
- 2 In the case of samples known to contain copper, zinc, iron or manganese ions, add one Phenoltest PR tablet. Crush and mix to dissolve.
- 3 Add one Phenoltest No 1 tablet, crush and mix to dissolve.
- 4 Add one Phenoltest No 2 tablet, crush and mix to dissolve.
- 5 Stand for 10 minutes to allow full colour development.
- 6 Select Phot 54 on the Photometer.
- 7 Take photometer reading in the usual manner (see Photometer instructions).
- 8 The result is displayed as mg/l $\text{C}_6\text{H}_5\text{OH}$.

Interferences

- 1 Use of the Phenoltest PR tablet will prevent interference from metal ions up to a concentration of 350 mg/l. The test is unaffected by free chlorine in the sample up to 10 mg/l.
 - 2 Low results may be obtained in samples containing more than 150 mg/l alkalinity (as CaCO_3), 10 mg/l sulphite or 2 mg/l sulphide. Certain organic keto-enol compounds may cause high results. In the case of known or suspected interferences, then the sample should be pre-treated in accordance with standard analytical procedures.
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