

diffuses itself through the entire mass of the phenol solution. This color is stable, and remains unaltered for months. If the red liquid is removed from the acid and treated with an alkali, it becomes yellow without losing its transparency. This reaction serves to detect one part of phenol in about 2000 of water. Another method is as follows:—In a well glazed porcelain crucible is put a little of the most concentrated sulphuric acid, to which is added a relatively minute portion of bichromate of potash. The mixture is well stirred so that the liberated chromic acid may be uniformly distributed through the sulphuric acid. A small drop of the liquid under examination is placed upon the acid mixture, which immediately gives a brown coloration at the point of contact. If the proportion of phenol is larger than one part in 30,000, the coloration is accompanied with a chocolate-brown precipitate. The author has also examined Landolt's test, which consists in adding to the suspected solution bromine water in slight excess. If phenol is present, a yellowish-white precipitate is produced. The sensibility of this reaction extends to one part in 45,500. As Landolt has remarked, precipitates, more or less similar, are produced by oxybenzoic acid, the homologues of phenic acid, anilin, toluidin, quinia, quinidin, cinchonia, strychnia, narcotina and morphia. The author considers that the yellowish-white precipitate may be recognized as tribromophenol by the following reactions:—It has a special odor, slightly recalling that of the hydride of salicylic acid. It is insoluble in acids, but soluble in alkalies, ether, and absolute alcohol. A very small quantity of water completely separates tribromophenol from its alcoholic solution. If carefully heated on platinum foil it may be volatilized unchanged without leaving a residue. But if the heat is strong the compound is decomposed and burns with a smoky flame, evolving much bromine, and leaving a carbonaceous residue. A portion placed in a porcelain capsule, and treated with sulphuric acid and bichromate of potash, produces a chocolate-brown color, with the escape of bromine vapors. If the bichromate is dissolved in water, and the experiment conducted in a glass tube, with the application of heat, the liquid takes a fine green color. If gently heated with nitre and concentrated sulphuric acid, it forms oily drops of a fine red color, which burn, leaving a bulky carbonaceous residue.