

TEST PAPERS.*

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For the preparation of litmus paper the author recommends that the litmus be washed with hot alcohol and then extracted with cold water. This extract may be brushed on writing paper on one side. The paper must be washed with water to remove free alkali or acid.

Turmeric roots contain two yellow dyes, one soluble in water and unaffected by alkalis, the other soluble in alcohol. The roots should be washed in water as long as the washings are coloured, and then exhausted with alcohol.

Paper soaked in potassium sulphocyanate or ferrocyanide may be used for the detection of iron.

Paper containing starch moistened with a solution of potassium iodate in oxalic acid, and dried, is turned blue by bodies which act as reducing agents, such as sulphurous acid, hyposulphites, sulphuretted hydrogen, potassium sulphocyanate, ferrous oxide, cupric chloride, potassium iodide, and similar bodies.

For oxidizing bodies a starch paper with potassium iodide may be used. To keep such paper unchanged, a lighted sulphur match should be held in the bottle in which the paper is preserved before closing the stopper.

The author also recommends the following test-papers:—For ammonia-gas: paper soaked in mercurous oxide solution. For sulphuretted hydrogen and alkaline sulphides: acetate of lead paper; filter-paper soaked in cobalt chloride; polished visiting cards known as "Polka papier;" paper painted with bismuth white.

For metals which give black precipitates with sulphuretted hydrogen in acid solution, washed sulphide of zinc precipitated from the acetate is smeared on writing paper and dried. Any mineral acid decomposes the sulphide of zinc, setting free sulphuretted hydrogen, which immediately precipitates the metals present.

The violet assumed by litmus in the titration of solutions which do not contain carbonates is due to the carbonic acid contained in the litmus itself. If this be expelled by acidifying with dilute sulphuric acid and then boiling for some time, the litmus, after treatment with baryta water, changes from blue to red without any intermediate violet. In titrations with litmus, if the final colour is to be blue, blue litmus should be added first; if red, the red solution must be used. In this way all errors arising from the litmus itself may be avoided.

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