

ZIRCONIUM Test Paper

for the rapid determination of zirconium

Colour reaction:

When used in accordance with the instructions, the test paper shows red-violet spots against a yellow background.

Presentation:

Plastic boxes of 100 strips, each 20 x 70 mm.

Method of application:

Apply a drop of the **hydrochloric acid** solution to the test paper. The point of application of the drop is exposed for about 10 seconds, on both sides, to ammonia vapor by holding it over conc. NH_4OH and then dipped in hydrochloric acid of 5 %.

In the presence of large quantities of Zr^{4+} , the test paper will show a red-violet spot, whereas very small quantities of Zr^{4+} produce only a red-violet ring on the yellow background.

A brownish-yellow ring around the point of application of the drop of solution should not be interpreted as being positive.

Limit of sensitivity: 20 mg/l Zr^{4+} .

Interferences:

The colour reaction is specifically for Zirconium; only Hafnium interfere. Larger quantities of sulfate may cause some interference. This can be eliminated by adding barium chloride to the test solution and by carrying the tests in accordance with the above instructions, without filtering.

Note:

The ZIRCONIUM test paper can also be used for the determination of aluminum by following the instructions applicable to the aluminum test paper.

ALUMINUM Test Paper

for the rapid determination of aluminum

Colour reaction:

When used in accordance with the method of application, the test paper shows bright red spots against a yellow background.

Presentation:

Plastic boxes of 100 strips, each 20 x 70 mm.

Method of application:

A drop of the weakly mineral acid solution, buffered with sodium acetate, is applied to the test paper. The point of application of the drop is exposed for about 10 seconds, on both sides, to ammonia vapor by holding it over conc. NH_4OH and then washed in acetic acid solution of 5-10%. In the presence of large quantities of Al^{3+} , the test paper will show a bright red spot, whereas very small quantities of Al^{3+} produce only a bright red ring on the yellow paper.

A brownish-yellow ring around the point of application of the drop of solution should not be interpreted as being positive.

Limit of sensitivity: 10 mg/l Al^{3+} .

Interferences:

Fe, Zn, Cu, Mn and Zr interfere with the determination of Al^{3+} .

The interference can be eliminated by reacting the test solution with an excess of 10% solution of potassium hexacyanoferrate(II). After settling or filtration of the precipitate, apply a drop of the clear solution to the test paper and proceed as above.

Fluoride ions – depending upon their concentrations – prevent the formation of the red colour. They have to be removed by evaporation with concentrated sulphuric acid. The same procedure has to be followed when polyphosphate ions are present.

Note:

The ALUMINUM test paper can also be used for the determination of zirconium by following the instructions applicable to the zirconium test paper.