

NICKEL Test Paper

for the rapid determination of nickel in solutions
and in nickel-containing alloys

Colour reaction:

The white test paper turns red upon contact with Ni^{2+} .

Method of application:

a) Determination of nickel in solutions:

Apply a drop of the solution to be tested to the test paper. In the case of strongly acid solution, add a small amount of crystalline sodium acetate. The presence of substantial quantities of Ni^{2+} is indicated by the appearance of a red spot; small amounts result in a red ring.

Limit of sensitivity: 10 mg/l Ni^{2+}

b) Determination of nickel in nickel-containing alloys:

Apply a drop of dilute nitric acid (prepared from 1 volume conc. nitric acid and 5 volumes of distilled water) to the degreased metal surface. After approximately one minute, i.e. after the solution has reacted with the metal surface, a drop of acid is absorbed onto the test paper. A purple-red border or spot on the test paper indicates the presence of nickel in excess of 0.5 %. The reading must be taken immediately, since a brown discoloration, caused by the presence of iron, will cover the color reaction caused by nickel after a few minutes.

Interferences:

Iron, cobalt and copper cause interferences.

Ferrous ions in ammonia containing solutions also cause a brilliant red discoloration. In such cases, the solution must be acidified or the ferrous ion converted into ferric ion with H_2O_2 .

Co^{2+} and Cu^{2+} in large amounts result in misleading color spots. These, however, can be eliminated by flushing the test paper in dilute ammonia solution for some minutes after the test solution has been applied to the test paper, retaining only the red nickel color reaction. This permits the determination of Ni^{2+} in the presence of large amounts of Co^{2+} and Cu^{2+} .