Bromophenol blue solution. 1012801.
Dissolve 0.1 g of bromophenol blue R in 1.5 ml of 0.1 N sodium hydroxide and 20 ml of alcohol R and dilute with 100 ml with water R.

Hydrochloric acid. 1043500. [7647-01-0].
See Concentrated hydrochloric acid (0002).

Hydrochloric acid R1. 1043501.
Contains 250 g/1 of HCl.
Dilute 70 g of hydrochloric acid R to 100 ml with water R.

Hydrochloric acid, brominated. 1043507.
To 1 ml of bromine solution R add 100 ml of hydrochloric acid R.

Hydrochloric acid, dilute. 1043503.
Contains 73 g/1 of HCl.
Dilute 20 g of hydrochloric acid R to 100 ml with water R.

Hydrochloric acid, dilute R1. 1043504.
Contains 0.37 g/1 of HCl. ]
Dilute 1.0 ml of dilute hydrochloric acid R to 200.0 ml with water R.

Hydrochloric acid, dilute R2. 1043505.
Dilute 30 ml of 1 M hydrochloric acid to 1000 ml with water R; adjust to pH 1.6 +/- 0.1.

Hydrochloric acid, ethanolic. 1 043506.
Dilute 5.0 ml of 1 M hydrochloric acid to 500.0 ml with alcohol R

Hydrochloric acid, lead-free. 1043508.
Complies with the requirements prescribed for S hydrochloric acid R and with the following additional r test

Lead. Not more than 20 ppm of Pb determined by atomic ( emission spectrometry (Method J; 2.2.22).

Test solution. In a quartz crucible evaporate 200 g of n the acid to be examined almost to dryness. Take up the residue in 5 ml of nitric acid prepared by sub-boiling distillation of nitric acid R and evaporate to dryness. Take up the residue in 5 ml of nitric acid prepared by sub-boiling distillation of nitric acid R.

Reference solutions. Prepare the reference solutions using lead standard solution (0.1 ppm Pb) R diluted with nitric acid prepared by sub-boiling distillation of nitric acid R.

Measure the emission intensity at 220.35 nm.

Iodine, 1045800. [7553-56-2].
See Iodine (0031).

Iodine solution R1. 1045801.
To 10.0 ml of 0.05 M iodine add 0.6 g of potassium iodide R and dilute to 100.0 ml with water R. Prepare immediately before use.
**Immerse strips of filter paper in 100 ml of Starch iodide paper.**

Allow to dry protected from light.

Immerse strips of filter paper in 100 ml of most slightly opalescent and remains fluid on cooling.

Prepare a 20 g/l solution in hot water. A white powder. Starch, soluble.

Thioacetamide. C₂H₃NS. (M, 75.1). 1089600. [62-55-5]. A crystalline powder or colour less crystals, freely soluble in water and in alcohol.

mp: about 113 °C.

Thioacetamide reagent. 1089601.

To 0.2 ml of thioacetamide solution R add 1 ml of a mixture of 5 ml of water R, 15 ml of 1 M hydrochloric acid and 20 ml of glycerol (85 per cent) R. Heat in a water-bath for 20 s. Prepare immediately before use.

Thioacetamide solution. 1089602.

A 40g/l solution.

Starch, soluble. 1085100. [9005-84-9]. A white powder. Prepare a 20 g/l solution in hot water R. The solution is at most slightly opalescent and remains fluid on cooling.

Starch iodate paper. 1085101.

Immerse strips of filter paper in 100 ml of iodide-free starch solution R containing 0.1 g of potassium iodate R. Drain and allow to dry protected from light.

Starch iodide paper. 1085106.

Immerse strips of filter paper in 100 ml of starch solution R containing 0.5 g of potassium iodide R. Drain and allow to dry protected from light.

**Iodine solution R2. 1045802.**

To 10.0 ml of 0.05 M iodine add 0.6 g of potassium iodide R and dilute to 1000.0 ml with water R. Prepare immediately before use.

**Sodium hydroxide. 1081400. [1310-73-2].**

See Sodium hydroxide (0677).

**Sodium hydroxide solution. 1081401.**

Dissolve 20.0 g of sodium hydroxide R in water R and dilute to 100.0 ml with the same solvent Verify the concentration by titration with 1 M hydrochloric acid, using methyl orange solution R as indicator, and adjust if necessary to 200 g/l.

**Sodium hydroxide solution, dilute. 1081402.**

Dissolve 8.5 g of sodium hydroxide R in water R and dilute to 100 ml with the same solvent.

**Sodium hydroxide solution, methanolic. 1081403.**

Dissolve 40 mg of sodium hydroxide R in 50 ml of water R. Cool and add 50 ml of methanol R.

**Sodium hydroxide solution, methanolic R1. 1081404.**

Dissolve 200 mg of sodium hydroxide R in 50 ml of water R. Cool and add 50 ml of methanol R.

**Sodium hydroxide solution, strong. 1081404.**

Dissolve 42 g of sodium hydroxide R in 50 ml of water R. Cool and add 50 ml of methanol R.

Thioacetamide solution. 1089602. A 40 g/l solution.

**Test for sensitivity.** Mix 0.05 ml of 0.1 M sodium nitrite with 4 ml of hydrochloric acid R and dilute to 100 ml with water R. Apply one drop of the solution to starch iodide paper; a blue spot appears.

**Starch solution. 1081405.**

Triturate 1.0 g of soluble starch R with 5 ml of water R and whilst stirring pour the mixture into 100 ml of boiling water R containing 10 mg of mercuric iodide R. Carry out the test for sensitivity each time the reagent is used.

**Starch solution R1. 1085105.**

Mix 1 g of soluble starch R and a small amount of cold water R. Add this mixture, while stirring, to 200 ml of boiling water R. Add 250 mg of salicylic acid R and boil for 3 min. Immediately remove from the heat and cool.

If long storage is required, the solution shall be 4 °C to 10 °C. A fresh starch solution shall be prepared each time the end-point of the titration from blue to c fails to be sharp. If stored under refrigeration, the solution is stable for about 2 to 3 weeks.

**Test for sensitivity.** A mixture of 2 ml of starch solution R, 20 ml of water R, about 50 mg of potassium iodide R and 0.05 ml of iodine solution R1 is blue.

**Sulphuric acid. H₂SO₄. (Mr 98.1). 1086800. [7664-93-9].**

Contains not less than 95.0 per cent m/m and not more than 97.0 per cent m/m of H₂SO₄.

A colourless, caustic liquid with an oily consistency, highly hygroscopic, miscible with water and with alcohol producing intense heat.

d₂₀/₂₀: 1.834 to 1.837.

A 10 g/l solution is strongly acid and gives the reactions of sulphates (2.3.1).

**Appearance.** It is clear (2.2.1) and colourless (Method II, 2.2.2).

**Oxidisable substances.** Pour 20 g cautiously, with cooling, into 40 ml of water R. Add 0.5 ml of 0.002 M potassium permanganate. The violet colour persists for at least 5 min.
Chlorides. Pour 10 g, carefully and while cooling, into 10 ml of water R and after cooling dilute to 20 ml with the same solvent. Add 0.5 ml of silver nitrate solution R2. Allow to stand for 2 min protected from bright light. The solution is not more opalescent that a standard prepared at the same time using a mixture of 1 ml of chloride standard solution (5 ppm Cl) R, 19 ml of water R and 0.5 ml of silver nitrate solution R2 (0.5 ppm).

Nitrates. Pour 50 g or 27.2 ml, carefully and while cooling, into 15 ml of water R. Add 0.2 ml of a freshly prepared 50 g/l solution of brucine R in glacial acetic acid R. After 5 min any colour is less intense than that of a reference mixture prepared in the same manner and containing 12.5 ml of water R, 50 g of nitrogen-free sulphuric acid R, 2.5 ml of nitrate standard solution (10 ppm NO3) R and 0.2 ml of a 50 g/l solution of brucine R in glacial acetic acid R (0.5 ppm).

Ammonium. Pour 2.5 g, carefully and while cooling, into water R and dilute to 20 ml with the same solvent. Cool, and add dropwise 10 ml of a 200 g/l solution of sodium hydroxide R, followed by 1 ml of alkaline potassium tetraiodomercurate solution R. The colour of the solution is less intense than that of a mixture of 5 ml of ammonium standard solution (1 ppm NH4) R, 15 ml of water R, 10 ml of a 200 g/l solution of sodium hydroxide R and 1 ml of alkaline potassium tetraiodomercurate solution R (2 ppm).

Arsenic (2.4.2). To 50 g add 3 ml of nitric acid R and evaporate carefully until the volume is reduced to about 10 ml. Cool, add to the residue 20 ml of water R and concentrate to 5 ml. The solution complies with limit test A for arsenic (0.02 ppm). Prepare the standard using 1.0 ml of arsenic standard solution (1 ppm As) R.