

Magnesium Sulfate TS—Dissolve 12 g of crystals of magnesium sulfate, selected for freedom from efflorescence, in water to make 100 mL.

Malachite Green TS—Dissolve 1 g of malachite green oxalate in 100 mL of glacial acetic acid.

Mallory's Stain—Dissolve 500 mg of water-soluble aniline blue, 2 g of orange G, and 2 g of oxalic acid in 100 mL of water.

Mayer's Reagent—See *Mercuric–Potassium Iodide TS*.

Mercuric Acetate TS—Dissolve 6.0 g of mercuric acetate in glacial acetic acid to make 100 mL. Store in tight containers, protected from direct sunlight.

Mercuric–Ammonium Thiocyanate TS—Dissolve 30 g of ammonium thiocyanate and 27 g of mercuric chloride in water to make 1000 mL.

Mercuric Bromide TS, Alcoholic—Dissolve 5 g of mercuric bromide in 100 mL of alcohol, employing gentle heat to facilitate solution. Store in glass containers, protected from light.

Mercuric Chloride TS—Dissolve 6.5 g of mercuric chloride in water to make 100 mL.

Mercuric Iodide TS (Valser's Reagent)—Slowly add potassium iodide solution (1 in 10) to red mercuric iodide until almost all of the latter is dissolved, and filter off the excess. A solution containing 10 g of potassium iodide in 100 mL dissolves approximately 14 g of HgI_2 at 20°.

Mercuric Nitrate TS—Dissolve 40 g of mercuric oxide (red or yellow) in a mixture of 32 mL of nitric acid and 15 mL of water. Store in glass containers, protected from light.

Mercuric–Potassium Iodide TS (Mayer's Reagent)—Dissolve 1.358 g of mercuric chloride in 60 mL of water. Dissolve 5 g of potassium iodide in 10 mL of water. Mix the two solutions, and dilute with water to 100 mL.

Mercuric–Potassium Iodide TS, Alkaline (Nessler's Reagent)—Dissolve 143 g of sodium hydroxide in 700 mL of water. Dissolve 50 g of red mercuric iodide and 40 g of potassium iodide in 200 mL of water. Pour the iodide solution into the hydroxide solution, and dilute with water to 1000 mL. Allow to settle, and use the clear supernatant.

Mercuric Sulfate TS (Denigès' Reagent)—Mix 5 g of yellow mercuric oxide with 40 mL of water, and while stirring slowly add 20 mL of sulfuric acid, then add another 40 mL of water, and stir until completely dissolved.

Mercurous Nitrate TS—Dissolve 15 g of mercurous nitrate in a mixture of 90 mL of water and 10 mL of diluted nitric acid. Store in dark, amber-colored bottles in which a small globule of mercury has been placed.

Metaphenylenediamine Hydrochloride TS—Dissolve 1 g of metaphenylenediamine hydrochloride in 200 mL of water. The solution must be colorless when used. If necessary, decolorize by heating with activated charcoal.

Metaphosphoric–Acetic Acids TS—Dissolve 15 g of metaphosphoric acid in 40 mL of glacial acetic acid and sufficient water to make 500 mL. Store in a cold place, and use within 2 days.

Methoxyphenylacetic TS—Dissolve 2.7 g of methoxyphenylacetic acid in 6 mL of *Tetramethylammonium Hydroxide TS*, and add 20 mL of dehydrated alcohol. Store in a polyethylene container.

Methyl Orange TS—Dissolve 100 mg of methyl orange in 100 mL of water, and filter if necessary.

Methyl Purple TS—Use *Methyl Red–Methylene Blue TS*.

Methyl Red TS—Dissolve 100 mg of methyl red in 100 mL of alcohol, and filter if necessary.

Methyl Red TS 2—To 1.86 mL of 0.1 M sodium hydroxide and 50 mL of alcohol, add 50 mg of methyl red, and dilute with water to 100 mL.

Methyl Red TS, Methanolic—Dissolve 1 g of methyl red in 100 mL of methanol, and filter, if necessary. Store protected from light, and use within 21 days.

Methyl Red–Methylene Blue TS—Add 10 mL of methyl red TS to 10 mL of methylene blue TS, and mix.

Methyl Violet TS—Use *Crystal Violet TS*.

Methyl Yellow TS: Prepare a solution containing 0.10 mg per mL in alcohol.

Methyl Yellow–Methylene Blue TS—Dissolve 1 g of methyl yellow and 100 mg of methylene blue in 125 mL of methanol.

3-Methyl-2-benzothiazolinone Hydrazone Hydrochloride TS—Dissolve 0.1 g of 3-methyl-2-benzothiazolinone hydrazone hydrochloride monohydrate in 10 mL of water, dilute the resulting solution with methanol to 100 mL, and mix.

Methylene Blue TS—Dissolve 125 mg of methylene blue in 100 mL of alcohol, and dilute with alcohol to 250 mL.

Methylthionine Perchlorate TS—To 500 mL of potassium perchlorate solution (1 in 1000) add dropwise, with constant shaking, methylene blue solution (1 in 100) until a slight, permanent turbidity results. Allow the precipitate to settle, decant the supernatant through paper, and use only the clear solution.

Millon's Reagent—To 2 mL of mercury in a conical flask add 20 mL of nitric acid. Shake the flask under a hood to break up the mercury into small globules. After about 10 minutes, add 35 mL of water, and, if a precipitate or crystals appear, add sufficient dilute nitric acid (1 in 5, prepared from nitric acid from which the oxides have been removed by blowing air through it until it is colorless) to dissolve the separated solid. Add sodium hydroxide solution (1 in 10) dropwise, with thorough mixing, until the curdy precipitate that forms after the addition of each drop no longer redissolves but is dispersed to form a suspension. Add 5 mL more of the dilute nitric acid, and mix. Prepare this solution fresh.

Molybdo-phosphotungstate TS (Folin-Denis Reagent)—To about 350 mL of water contained in a round-bottom flask add 50 g of sodium tungstate, 12 g of phosphomolybdic acid, and 25 mL of phosphoric acid. Boil the mixture under a reflux condenser for 2 hours, then cool, dilute with water to 500 mL, and mix. Store in tight containers, protected from light, and in a cold place.

1-Naphthol Reagent—Dissolve 1 g of 1-naphthol in 25 mL of methanol. Prepare this solution fresh.

1-Naphthol TS—Use *1-Naphthol Reagent*.

2-Naphthol TS (Betanaphthol TS)—Dissolve 1 g of 2-naphthol in 100 mL of sodium hydroxide solution (1 in 100).