

1. Reagents and Test Solutions

Barium Chloride $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$ (Guaranteed)

Barium Hydroxide $\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O}$ (Guaranteed)

Barium Oxide BaO (for drying)

Basic Bismuth Nitrate (Guaranteed)

Basic Lead Acetate TS See Lead Acetate TS, Basic.

Benzene C_6H_6 (Guaranteed)

Benzoic Acid $\text{C}_6\text{H}_5\text{COOH}$ (Guaranteed)

Benzyl Alcohol $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$ (Guaranteed)

5-Benzyl-3,6-dioxo-2-piperazine Acetic Acid $\text{C}_{13}\text{H}_{14}\text{N}_2\text{O}_4$

5-Benzyl-3,6-dioxo-2-piperazine Acetic Acid occurs as a white to gray crystalline powder. It is slightly soluble in acidic water, freely soluble in neutral to alkaline water, and soluble in dimethylsulfoxide.

Melting point: 242 - 246 .

Purity: Other amino and imino compounds Use 5-Benzyl-3,6-dioxo-2-piperazine Acetic Acid solution (1 : 1,000) as the sample solution and a mixture of chloroform - methanol - water - acetic acid (32 : 15 : 3 : 1) as the developing solvent. Perform Thin-Layer Chromatography with 10 μl of the sample solution without a control solution. Only one spot is observed. For the thin-layer plate, use silica gel for thin-layer chromatography dried at 110 for 1 hour. When the solvent front rises about 10 cm high, stop the development, air-dry for 30 minutes. Transfer about 3 g of bleaching powder in a beaker, add cautiously 1 ml of hydrochloric acid so that chlorine gas evolves, and close tightly the beaker for 30 seconds to fill with gas. Place the plate in the prepared beaker, close tightly, and allow to stand for 20 minutes. Take out the thin - layer plate, allow to stand for 10 minutes, spray with ethanol, and air-dry. Spray with potassium iodide - starch TS, and observe under daylight.

Bertrand's TS A Weigh 40 g of fine cupric sulfate crystals, and dissolve in water to make 1,000 ml. Store in a bottle with a ground-glass stopper, almost filled.

Bertrand's TS B Weigh 200 g of potassium sodium tartrate and 150 g of sodium hydroxide, and dissolve in water to make 1,000 ml. Store in a container with a rubber stopper.

Bertrand's TS C Weigh 50 g of ferric sulfate [iron() sulfate], dissolve in about 500 ml of water, add slowly 200 ml of sulfuric acid, and shake. Cool, add dropwise Bertrand's TS D until a slightly red-brown color develops, and add water to make 1,000 ml.

Bertrand's TS D Weigh 5 g of potassium permanganate, and dissolve in water to make 1,000 ml.

Standardization: Weigh exactly 0.25 g of ammonium oxalate, and dissolve in 100 ml of water. Add 2 ml of sulfuric acid, warm to 60 - 70 , and titrate this solution with Bertrand's TS D. Designate the volume of consumed Bertrand's TS D as a ml. One ml of Bertrand's TS D corresponds to 0.2238/a g of Cu.

Bis (1-Phenyl-3-methyl-5-pyrazolone) $\text{C}_{20}\text{H}_{18}\text{N}_4\text{O}_2$

[Bis (1-phenyl-3-methyl-5-pyrazolone)]

N,O-Bis (Trimethylsilyl) Acetamide $\text{CH}_3\text{C}[\text{NSi}(\text{CH}_3)_3]\text{OSi}(\text{CH}_3)_3$

N,O-Bis (Trimethylsilyl) Acetamide is a colorless liquid.

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Refractive index: $n_D^{20} = 1.414 - 1.418$.

Specific gravity: 0.825 - 0.835.

Boiling point: 71.0 - 73.0 (4.7 kPa).

Bismuth Nitrate $\text{Bi}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$ (Guaranteed)

Bismuth Nitrate TS Weigh 5 g of bismuth nitrate, dissolve in 25 ml of water and 25 ml of acetic acid, and add water to make 250 ml.

Bleaching Powder (Extra grade)

Blue Litmus Paper See Litmus Paper, Blue.

Boric Acid H_3BO_3 (Guaranteed)

Bouillon, General Dissolve 5 g of meat extract and 10 g of peptone in 1,000 ml of water, while warming gently. Adjust pH so that it can be 6.4 - 7.0 after the solution is sterilized, and cool. Add the evaporated amount of water and filter. Autoclave at 121 for 30 minutes.

Brilliant Green $\text{C}_{27}\text{H}_{34}\text{N}_2\text{O}_4\text{S}$ Brilliant Green occurs as fine yellow crystals with luster. It is soluble in water and ethanol. It exhibits an absorption maximum at a wavelength of 623 nm.

Bromine Br_2 (Guaranteed)

Bromine TS Bromine TS is bromine saturated solution. Transfer 2 to 3 ml of bromine into a bottle with a ground-glass stopper, applied with Vaseline, and add 100 ml of cold water. Stopper tightly, and shake. Use the water layer as Bromine TS. Store in a cold place, if possible, protecting from light.

Bromine - Hydrochloric Acid TS Measure 1 ml of bromine - potassium bromide TS, and add 100 ml of arsenic-free hydrochloric acid.

Bromine - Potassium Bromide TS Weigh 30 g of bromine and 30 g of potassium bromide, mix, and dissolve in water to make 100 ml.

Bromocresol Green $\text{C}_{21}\text{H}_{14}\text{Br}_4\text{O}_5\text{S}$ (Guaranteed)

Bromocresol Green TS Weigh 50 mg of bromocresol green, and dissolve in 100 ml of ethanol. Filter if necessary.

Bromocresol Green - Methyl Red Mixture TS Mix equal volumes of bromocresol green TS and methyl red TS.

Bromophenol Blue $\text{C}_{19}\text{H}_{10}\text{Br}_4\text{O}_5\text{S}$ (Guaranteed)

Bromophenol Blue TS Weigh 0.1 g of bromophenol blue, and dissolve in 100 ml of 50% (vol) ethanol. Filter if necessary.

Bromophenol Blue TS for Citric Acid To bromophenol blue TS, add equal volume of ethanol, and adjust the pH to 7.0 with 0.01 mol/l sodium hydroxide.

Bromophenol Blue - Sodium Hydroxide TS Weigh 0.1 g of bromophenol blue, dissolve in 3 ml of 0.05 mol/l sodium hydroxide by shaking well, and add water to make 25 ml.

Bromothymol Blue $\text{C}_{27}\text{H}_{28}\text{Br}_2\text{O}_5\text{S}$ (Guaranteed)

Bromothymol Blue TS Weigh 0.1 g of bromothymol blue, and dissolve in 100 ml of 50% (vol) ethanol. Filter it if necessary.

Bromothymol Blue - Sodium Hydroxide TS Pulverize bromothymol blue. To 0.2 g of it, add 5 ml of sodium hydroxide solution(4.3 1,000), add a small amounts of water. Dissolve bromthymol blue shaking in a water bath at 50 , add water to make 100 ml.

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Brucine $C_{23}H_{26}N_2O_4 \cdot 2H_2O$ [Brucine, Dihydrate (2,3-Dimethoxystrychnidin-10-one, Dihydrate), Guaranteed]

1-Butanol $CH_3(CH_2)_2CH_2OH$ (Guaranteed)

n-Butanol See 1-Butanol

tert-Butanol $(CH_3)_3COH$ [2-Methyl-2-propanol (tert-Butyl alcohol), Guaranteed]

Butyl Alcohol, Iso See 2-Methyl-1-propanol

Butylated Hydroxytoluene $C_{15}H_{24}O$ "Butylated Hydroxytoluene"