

**Gold Chloride** (*Chlorauric Acid*),  $\text{HAuCl}_4 \cdot 3\text{H}_2\text{O}$ —**393.83** [16903-35-8]—Use ACS reagent grade.

**Guaiacol** (*o-Methoxyphenol*),  $\text{C}_7\text{H}_8\text{O}_2$ —**124.14** [95-05-1]—Colorless to yellowish, refractive liquid. Soluble in about 65 parts of water; soluble in sodium hydroxide solution; miscible with alcohol, with chloroform, with ether, and with glacial acetic acid.

**Assay**—When examined by gas-liquid chromatography, it shows a purity of not less than 98%. The following conditions have been found suitable for assaying it: a 3-mm  $\times$  1.8-m stainless steel column containing liquid phase G16 on 60- to 80-mesh support S1A. Helium is the carrier gas, the injection port temperature is maintained at 180°, the column temperature is maintained at 200°, and the flame-ionization detector is maintained at 280°. The retention time is about 8 minutes.

**Refractive index** (831): between 1.5430 and 1.5450, at 20°.

**Guanidine Hydrochloride**, (*Aminoformamidine Hydrochloride*; *Aminomethanamidine Hydrochloride*),  $\text{CH}_5\text{N}_3 \cdot \text{HCl}$ —**95.53** [50-01-1]—White, crystalline powder. Freely soluble in water and in alcohol. Use a suitable grade with a content not less than 99%.

**Guanidine Isothiocyanate**,  $\text{C}_2\text{H}_6\text{N}_4\text{S}$ —**118.2** [593-84-0]—White powder or colorless crystals. Use a suitable grade.

**Guanine Hydrochloride**,  $\text{C}_5\text{H}_5\text{N}_5\text{O} \cdot \text{HCl} \cdot \text{H}_2\text{O}$ —**205.60** [635-39-2]—White, crystalline powder. Melts above 250°, with decomposition. Slightly soluble in water and in alcohol; soluble in acidulated water and in sodium hydroxide TS. Its solutions are not precipitated by iodine TS or by mercuric-potassium iodide TS, but form a precipitate with trinitrophenol TS.

**Residue on ignition** (Reagent test): negligible, from 100 mg.

**Loss on drying** (731)—Dry it at 105° to constant weight; it loses not more than 10.0% of its weight.

**Hematein**,  $\text{C}_{16}\text{H}_{12}\text{O}_6$ —**300.26** [475-25-2]—Prepared from logwood extract or from hematoxylin by treatment with ammonia and exposure to air. Reddish-brown crystals with a yellowish-green metallic luster. Very slightly soluble in water (about 1 in 1700); slightly soluble in alcohol and in ether; insoluble in benzene and in chloroform; freely soluble in diluted ammonia solution to form a solution of dusky purplish-red color and in an aqueous solution of sodium hydroxide (1 in 50), to form a solution of bright red color, viewed in each case through a layer 1 cm in depth. Melts at a temperature above 200° and tends to decompose at 250°.

**Hematoxylin** (*Hydroxybrasilin*),  $\text{C}_{16}\text{H}_{14}\text{O}_6 \cdot 3\text{H}_2\text{O}$ —**356.32** [517-28-2]—A crystalline substance derived from the heartwood of *Haematoxylon campechianum* Linné (Fam. Leguminosae). Colorless to yellow prisms. Very slightly soluble in cold water and in ether; rapidly soluble in hot water and in hot alcohol. When exposed to light, it acquires a red color and yields a yellow solution. Dissolves in ammonia TS and in solutions of alkali hydroxides and carbonates. When dissolved in solutions of the following salts, it develops the colors indicated: in alum solution, a red color; in stannous chloride solution, a rose color; and in solutions of cupric salts, a greenish-gray color. It gradually turns black in potassium dichromate solution. Store hematoxylin and its solutions protected from light and air.

**Hemoglobin, Bovine** [9008-02-0]—Use a suitable grade.

[NOTE—A suitable grade is available as Bovine Hemoglobin substrate powder from Sigma-Aldrich, [www.sigma-aldrich.com](http://www.sigma-aldrich.com).]

**1-Heptadecanol**,  $\text{C}_{17}\text{H}_{36}\text{O}$ —**256.48** [1454-85-9]—Use a suitable grade.

**Heptafluorobutyric Acid**,  $\text{C}_4\text{F}_7\text{O}_2\text{H}$ —**214.04** [375-22-4]—Use a suitable grade.

**Heptakis-(2,6-di-O-methyl)- $\beta$ -cyclodextrin** (*2,6-Di-O-methyl- $\beta$ -cyclodextrin; Dimethyl- $\beta$ -cyclodextrin*)  $\text{C}_{56}\text{H}_{98}\text{O}_{35}$ —**1331.36** [51166-71-3]—Use a suitable grade.

**n-Heptane**—Use *n-Heptane, Chromatographic*.

**n-Heptane, Chromatographic**  $\text{C}_7\text{H}_{16}$ —**100.21** [142-82-5]—Clear, colorless, volatile, flammable liquid consisting essentially of  $\text{C}_7\text{H}_{16}$ . Practically insoluble in water; soluble in absolute alcohol. Miscible with ether, with chloroform, with benzene, and with most fixed and volatile oils. Use a suitable grade, chromatographic or HPLC, with a content of not less than 99%.

**Heptyl p-Hydroxybenzoate** (*Heptyl 4-Hydroxybenzoate; N-Heptyl 4-Hydroxybenzoate; Benzoic Acid, 4-Hydroxy-, Heptyl Ester*),  $\text{C}_{14}\text{H}_{20}\text{O}_3$ —**236.31** [1085-12-7]—Use a suitable grade with a content of NLT 98%.

**Hexadecyl Hexadecanoate** (*Hexadecyl Palmitate; Cetyl Palmitate*),  $\text{C}_{32}\text{H}_{64}\text{O}_2$ —**480.85** [540-10-3]—Use a suitable grade.

[NOTE—Suitable grades are available commercially as Hexadecyl Palmitate and Palmitic Acid Palmityl Ester from Sigma-Aldrich, [www.sigma-aldrich.com](http://www.sigma-aldrich.com), and Cetyl Palmitate, Catalog number C1203, from Spectrum Chemical Mfg. Corp., [www.spectrumchemical.com](http://www.spectrumchemical.com).]

**Hexadecyltrimethylammonium Bromide**—See *Cetyltrimethylammonium Bromide*.

**Hexadimethrine Bromide**,  $(\text{C}_{13}\text{H}_{30}\text{Br}_2\text{N}_2)_n$ —**28728-55-4**—White to off-white powder, hygroscopic, amorphous polymer. Soluble in water up to 10% to give a colorless to light yellow solution. Use a suitable grade.

**Hexamethyldisilazane**,  $\text{C}_6\text{H}_{19}\text{NSi}_2$ —**161.39** [999-97-3]—Clear, colorless liquid.

**Assay**—When examined by gas-liquid chromatography, it shows a purity of not less than 95%. The following conditions have been found suitable for assaying the article: A 2-mm  $\times$  1.8-m glass column packed with phase G3 on support S1. Helium, flowing at a rate of about 40 mL per minute, is the carrier gas; the detector temperature is about 310°; the injection port temperature is about 100°; and the column temperature is programmed to start at 35°, hold for 5 minutes, then rise at a rate of 8° per minute to 200°. A flame-ionization detector is employed.

**Residue after evaporation**—Transfer 200 g to a tared dish, and evaporate on a steam bath to dryness. Dry the residue at 105° for 1 hour, cool, and weigh: not more than 0.0025% of residue is found.

**Hexamethyleneimine** (*Homopiperidine*),  $\text{C}_6\text{H}_{12}\text{NH}$ —**99.17** [111-49-9]—Colorless to nearly colorless liquid.

**Refractive index** (831): between 1.4640 and 1.4660 at 20°.

**Hexamethylenetetramine**—See *Methenamine*.

**n-Hexane**,  $\text{C}_6\text{H}_{14}$ —**86.18** [110-54-3]—(for use in spectrophotometry)—Use *Hexanes*.

**Hexane, Solvent** (*Petroleum Benzin; Petroleum Ether, Ligroin*) [8032-32-4]—Clear, volatile liquid. Practically insoluble in water; soluble in absolute alcohol. Miscible with ether, with chloroform, with benzene, and with most fixed and volatile oils.

[CAUTION—It is dangerously flammable. Keep it away from flames, and store in tight containers in a cool place.]

Use ACS reagent grade Petroleum Ether.

**Hexane, Solvent, Chromatographic**—Use ACS HPLC reagent grade.

**Hexanes** (suitable for use in UV spectrophotometry); usually a mixture of several isomers of hexane ( $\text{C}_6\text{H}_{14}$ ), predominantly *n*-hexane, and methylcyclopentane ( $\text{C}_6\text{H}_{12}$ )—Use ACS spectrophotometric reagent grade.

**Hexanitrodiphenylamine** (*Dipicrylamine*),  $\text{C}_{12}\text{H}_5\text{N}_3\text{O}_{12}$ —**439.21** [131-73-7]—Yellow-gold powder or prisms. Explosive. Usually contains about 15% of water as a safety precaution. Insoluble in water, in alcohol, in acetone, and in ether; soluble in glacial acetic acid and in alkalies.

**Water, Method I** (921): not more than 16%.

**Hexanophenone**,  $\text{C}_{12}\text{H}_{16}\text{O}$ —**176.25** [942-92-7]—Yellow liquid.

**Assay**—Inject an appropriate specimen into a suitable gas chromatograph (see *Chromatography* (621)) equipped with a flame-ionization detector, helium being used as the carrier

gas. The following conditions have been found suitable: a 0.25-mm × 30-m capillary column coated with a 1-μm layer of phase G3; the injection port temperature is maintained at 280°; the detector temperature is maintained at 300°; the column temperature is maintained at 180° and programmed to rise 10° per minute to 280°. The area of the C<sub>12</sub>H<sub>16</sub>O peak is not less than 98% of the total peak area.

*Refractive index* (831): 1.511 ± 0.002 at 20°.

**Hexylamine** (1-Aminohexane), C<sub>6</sub>H<sub>15</sub>N—**101.19** [111-26-2]—Use a suitable grade with a content of not less than 99%.

**Histamine Dihydrochloride**, C<sub>5</sub>H<sub>9</sub>N<sub>3</sub> · 2HCl—**184.07**—Use USP Histamine Dihydrochloride RS.

**L-Histidine Hydrochloride Monohydrate**, C<sub>6</sub>H<sub>9</sub>N<sub>3</sub>O<sub>2</sub> · HCl · H<sub>2</sub>O—**209.63** [5934-29-2]—Use a suitable grade.

**Horseradish Peroxidase Conjugated to Goat Anti-Mouse IgG**—Affinity purified polyclonal antibody to Mouse Immune globulin (IgG) heavy and light chains (whole IgG) produced in Goat and labeled with horseradish peroxidase. Available either as a lyophilized powder or as a solution in a suitable buffer, generally 10 mM sodium phosphate, pH 7.4, containing a suitable preservative, such as 0.01% thimerosal, and an inactive protein(s) to prevent adsorption on the surface of the container. Use a suitable grade. Store at -20°.

**Hydrazine Dihydrochloride**, (NH<sub>2</sub>)<sub>2</sub> · 2HCl—**104.97**

[5341-61-7]—White powder.

**Assay**—Dissolve about 34 mg, accurately weighed, in 50 mL of water. Add carefully while stirring, 1 g of sodium bicarbonate. [CAUTION—There may be a rapid evolution of carbon dioxide.] Titrate with 0.1 N iodine solution, determining the endpoint potentiometrically. Perform a blank determination, and make any necessary corrections. Each mL of 0.1 N iodine solution is equivalent to 2.63 mg of (NH<sub>2</sub>)<sub>2</sub> · 2HCl. Not less than 98% is found.

**Hydrazine Hydrate, 85% in Water**, (NH<sub>2</sub>)<sub>2</sub> · H<sub>2</sub>O—**50.06** [7803-57-8]—Colorless liquid.

**Assay**—Transfer 600 mg, accurately weighed, to a 100-mL volumetric flask. Dilute with water to volume, and mix. Pipet 10 mL into a suitable beaker, and add 1.0 g of sodium bicarbonate and 50.0 mL of 0.1 N iodine VS. Titrate the excess iodine with 0.1 N sodium thiosulfate VS, using starch TS as the indicator. Perform a blank determination, and make any necessary correction. Each mL of 0.1 N iodine is equivalent to 1.252 mg of (NH<sub>2</sub>)<sub>2</sub> · H<sub>2</sub>O. Not less than 83% is found.

**Hydrazine Sulfate**, (NH<sub>2</sub>)<sub>2</sub> · H<sub>2</sub>SO<sub>4</sub>—**130.12** [10034-93-2]—Use ACS reagent grade. [CAUTION—Great care should be taken in handling hydrazine sulfate because it is a suspected carcinogen.]

**Hydrindantin** (2,2'-Dihydroxy-2,2'-biindan-1,1',3,3'-tetraone), C<sub>18</sub>H<sub>10</sub>O<sub>6</sub>—**322.27** [5103-42-4]—Sparingly soluble in hot water; soluble in methoxyethanol. When heated above 200°, it becomes reddish brown.

*Melting range* (741): between 249° and 254°.

**Hydriodic Acid**, HI—**127.91** [10034-85-2]—Use ACS reagent grade (containing not less than 47.0% of HI).

[NOTE—For methoxy determination (see *Methoxy Determination* (431)), use hydriodic acid ACS reagent grade 55%. Use this grade also for alkoxyl determinations in assays in the individual monographs.]

**Hydrobromic Acid**, HBr—**80.91** [10035-10-6]—Use ACS reagent grade.

**Hydrochloric Acid**, HCl—**36.46** [7647-01-0]—Use ACS reagent grade.

**Hydrochloric Acid, Diluted** (10 percent) [7647-01-0]—Prepare by mixing 226 mL of hydrochloric acid with sufficient water to make 1000 mL.

**Hydrofluoric Acid**, HF—**20.01** [7664-39-3]—Use ACS reagent grade.

**Hydrogen Peroxide**, H<sub>2</sub>O<sub>2</sub>—**34.01** [7722-84-1]—Use ACS reagent grade with an assay content between 29.0% and 32.0%.

**Hydrogen Peroxide, 10 Percent**, H<sub>2</sub>O<sub>2</sub>—**34.01**—Dilute 30 mL of 30 percent hydrogen peroxide with water to 100 mL.

**Hydrogen Peroxide, 30 Percent, Unstabilized** H<sub>2</sub>O<sub>2</sub>—**34.01** [7722-84-1]—Use ACS reagent grade, with an assay content between 29.0% and 32.0%, without an added stabilizer.

**Hydrogen Peroxide, 50 Percent in Water**, H<sub>2</sub>O<sub>2</sub>—**34.01** [7722-84-1]—Use a suitable grade.

**Hydrogen Peroxide Solution**—Use *Hydrogen Peroxide Topical Solution*.

**Hydrogen Sulfide**, H<sub>2</sub>S—**34.08** [7783-06-4]—Colorless, poisonous gas, heavier than air. Soluble in water. Is generated by treating ferrous sulfide with diluted sulfuric or diluted hydrochloric acid. Other sulfides yielding hydrogen sulfide with diluted acids may be used. Is also available in compressed form in cylinders.

**Hydrogen Sulfide Detector Tube**—A fuse-sealed glass tube so designed that gas may be passed through it and containing suitable absorbing filters and support media for the indicator, the latter consisting of a suitable lead salt.

*Measuring range*: 1 to 20 ppm.

[NOTE—Available from Draeger Safety, Inc., www.draeger.com, or from Gastec Corp., www.gastec.co.jp, distributed in the USA by www.nexteq.com.]

**Hydroquinone**, C<sub>6</sub>H<sub>4</sub>(OH)<sub>2</sub>—**110.11** [123-31-9]—Fine, colorless or white, needle crystals. Darkens on exposure to air and light. Soluble in water, in alcohol, and in ether.

**Assay**—Accurately weigh about 250 mg, and dissolve in a mixture of 100 mL of water and 10 mL of 0.1 N sulfuric acid in a 250-mL conical flask. Add 3 drops of a 1 in 100 solution of diphenylamine in sulfuric acid, and titrate with 0.1 N ceric sulfate VS until the solution is red-violet in color. Each mL of 0.1 N ceric sulfate is equivalent to 5.506 mg of C<sub>6</sub>H<sub>4</sub>(OH)<sub>2</sub>. Not less than 99% is found.

*Melting range* (741): between 172° and 174°.

**Hydroxy Naphthol Blue** (1-(2-Naphtholazo-3,6-disulfonic Acid)-2-naphthol-4-sulfonic Acid, Disodium Salt), C<sub>20</sub>H<sub>12</sub>N<sub>2</sub>O<sub>11</sub>S<sub>2</sub>Na<sub>2</sub>—**598.50** [165660-27-5]—Deposited on crystals of sodium chloride in the concentration of about 1%. Use ACS reagent grade.

**3'-Hydroxyacetophenone**, C<sub>8</sub>H<sub>8</sub>O<sub>2</sub>—**136.15** [121-71-1]—Light brown powder chips and chunks. Melts at about 96°. Sparingly soluble in chloroform, yielding a clear, light yellow solution.

**Assay**—Inject an appropriate specimen into a suitable gas chromatograph (see *Chromatography* (621)) equipped with a flame-ionization detector, helium being used as the carrier gas. The following conditions have been found suitable: a 0.25-mm × 30-m capillary column coated with G1; the detector and the injection port temperatures are maintained at 300°; the column temperature is maintained at 180° and programmed to rise 10° per minute to 280° and held at that temperature for 10 minutes. The area of the main peak is not less than 97% of the total peak area.

**4'-Hydroxyacetophenone**, HOC<sub>6</sub>H<sub>4</sub>COCH<sub>3</sub>—**136.15** [99-93-4]—Gray powder, melting at about 109°.

**p-Hydroxybenzoic Acid**, C<sub>7</sub>H<sub>6</sub>O<sub>3</sub>—**138.12** [99-96-7]—White crystals.

**Assay**—Transfer about 700 mg, accurately weighed, to a suitable container, and dissolve in 50 mL of acetone. Add 100 mL of water, mix, and titrate with 0.5 N sodium hydroxide VS, determining the endpoint potentiometrically. Perform a blank determination, and make any necessary correction. Each mL of 0.5 N sodium hydroxide is equivalent to 69.06 mg of C<sub>7</sub>H<sub>6</sub>O<sub>3</sub>; not less than 97% is found.

*Melting range* (741): over a range of 2° that includes 216°.

**4-Hydroxybenzoic Acid Isopropyl Ester**, HOC<sub>6</sub>H<sub>4</sub>COOCH(CH<sub>2</sub>)<sub>2</sub>—**180.18** [4191-73-5]—Use a suitable grade.

[NOTE—A suitable grade is available from TCI America, www.tciamerica.com.]

*Melting range* (741): between 84° and 87°.

**Delete the following:**

**■1-Hydroxybenzotriazole Hydrate**,  $C_6H_5N_3O \cdot xH_2O$ —**135.13** (anhydrous) [123333-53-9]—White, crystalline powder. Sparingly soluble in alcohol yielding a clear, pale yellow solution.<sup>115 (USP35)</sup>

**2-Hydroxybenzyl Alcohol**,  $C_7H_8O_2$ —**124.14** [90-01-7]—Off-white flakes. Very soluble in alcohol, in chloroform, and in ether; soluble in 15 parts water and in benzene.

**Assay**—Inject an appropriate specimen into a gas chromatograph (see *Chromatography* (621)), equipped with a flame-ionization detector, helium being used as the carrier gas. The following conditions have been found suitable: a 0.25-mm × 30-m capillary column coated with a 1-μm layer of phase G2; the injection port temperature is maintained at 250°; the detector temperature is maintained at 300°; and the column temperature is maintained at 150° and programmed to rise 10° per minute to 280°. The area of the  $C_7H_8O_2$  peak is not less than 99% of the total peak area.

*Melting range* (741): between 83° and 85°.

**4-Hydroxybutane-1-sulfonic Acid** (*4-Hydroxy-1-butanesulfonic Acid*),  $C_4H_{10}O_4S$ —**154.19** [26978-64-3]—Use a suitable grade with a content of NLT 95%. [NOTE—A suitable grade is available as catalog number RM-967-C50 from [www.cydexpharma.com](http://www.cydexpharma.com).]

**N-(2-Hydroxyethyl)piperazine-N'-(2-ethanesulfonic acid)**,  $C_8H_{18}N_2O_4S$ —**238.3** [7365-45-9]—Use a suitable grade.

**Hydroxylamine Hydrochloride**,  $NH_2OH \cdot HCl$ —**69.49** [5470-11-1]—Use ACS reagent grade.

**10β-Hydroxynorandrostenedione** (*10β-Hydroxy-19-norandrost-4-ene-3,17-dione*),  $C_{18}H_{24}O_3$ —**288.38**—Use a suitable grade.

**4-(4-Hydroxyphenyl)-2-butanone**,  $C_{10}H_{12}O_2$ —**164.20** [5471-51-2]—White powder.

**Assay**—Inject an appropriate volume into a gas chromatograph (see *Chromatography* (621)) equipped with a flame-ionization detector, helium being used as the carrier gas. The following conditions have been found suitable: a 0.25-mm × 30-m capillary column coated with a 1-μm layer of phase G43; the injection port temperature is maintained at 280°; the detector temperature is maintained at 300°; the column temperature is maintained at 180° and programmed to rise 10° per minute to 280°. The area of the  $C_{10}H_{12}O_2$  peak is not less than 98.5% of the total peak area.

*Melting range* (741): between 81° and 87°.

**3-Hydroxyphenyldimethylethyl Ammonium Chloride** [*Dimethylethyl(3-hydroxyphenyl)ammonium Chloride*]—Use *Edrophonium Chloride*.

**D-α-4-Hydroxyphenylglycine**,  $C_8H_9NO_3$ —**167.16**

[22818-40-2]—Shiny leaflets. Sparingly soluble in water, in alcohol, in acetone, in ether, in chloroform, in ethyl acetate, in benzene, and in glacial acetic acid; soluble in alkalies and in mineral acids; freely soluble in warm 20% v/v hydrochloric acid.

*Melting range* (741): between 220° and 247°, with decomposition.

**2'-(4-Hydroxyphenyl)-5-(4-methyl-1-piperazinyl)-2,5'-bi-1H-benzimidazole Trihydrochloride Pentahydrate**—**623.97** [23491-44-3]—Dark yellow to tan powder with a green cast. Use a suitable grade.

**Hydroxypropyl-β-cyclodextrin**, (*Hydroxypropylbetadex*),  $C_{42}H_{70}O_{35}(C_3H_6O)_x$  with  $x = 7$  molar substitution [94035-02-6]—Use a suitable grade with a substitution degree between 0.40 and 1.50.

**8-Hydroxyquinoline** (*Oxine*),  $C_9H_7NO$ —**145.16** [148-24-3]—Use ACS reagent grade 8-Quinolinol.

**Hypophosphorous Acid, 50 Percent** (*Hypophosphorous Acid*),  $HPH_2O_2$ —**66.00** [6303-21-5]—A colorless to faintly yellow liquid. Miscible with water and with alcohol.

**Assay**—Accurately weigh about 4 mL, dilute with 25 mL of water, add methyl red TS, and titrate with 1 N sodium hydroxide VS: each mL of 1 N sodium hydroxide is equivalent to 66.00 mg of  $HPH_2O_2$ . Not less than 48% is found.

**Chloride**—Add 0.2 mL to a mixture of 10 mL of silver nitrate TS and 5 mL of nitric acid, and heat until brown fumes are no longer evolved: any white, insoluble residue remaining is negligible.

**Phosphate**—Dilute 1 mL with water to 50 mL, render alkaline with ammonia TS, filter if a precipitate is formed, and add to the filtrate 5 mL of magnesia mixture TS: not more than a slight precipitate is formed within 5 minutes.

**Sulfate** (Reagent test, *Method I*)—Dilute 1 mL with water to 50 mL: 20 mL of the solution shows not more than 0.2 mg of  $SO_4^{2-}$ .

**Hypoxanthine**,  $C_5H_4N_4O$ —**136.11** [68-94-0]—White to yellowish-white powder. Soluble in 1 N sodium hydroxide. Use a suitable grade.

**IgG-Coated Red Cells**—Red cells coated with human immunoglobulin (IgG). The reagent must be obtained from manufacturers or suppliers licensed by the Center for Biologics Evaluation and Research, Food and Drug Administration. The use of reagents from an unlicensed manufacturer or supplier may invalidate the results.

[NOTE]—There are many manufacturers and suppliers of these reagents that are licensed by the Center for Biologics Evaluation and Research, Food and Drug Administration. Some examples of licensed manufacturers or suppliers are the following: Gamma Biologics, Houston, TX; and Ortho Diagnostics, Raritan, NJ.]

**Imidazole**,  $C_3H_4N_2$ —**68.08** [288-32-4]—White to light yellow crystals. Freely soluble in water. Use ACS reagent grade.

**Indene**,  $C_9H_8$ —**116.16** [95-13-6]—Colorless liquid.

**Assay**—Inject an appropriate specimen into a suitable gas chromatograph (see *Chromatography* (621)) equipped with a flame-ionization detector, helium being used as the carrier gas. The following conditions have been found suitable: a 0.25-mm × 10-m capillary column coated with a 1-μm layer of methylsilicone; the injection port temperature is maintained at 200°; the detector temperature is maintained at 300°; the column temperature is maintained at 100° and programmed to rise 10° per minute to 250°. The area of the indene peak is not less than 99% of the total peak area.

**Refractive index** (831): between 1.5749 and 1.5769 at 20°.

**Indicators**—See separate subsection.

**Indigo Carmine**—Use *Indigotindisulfonate Sodium*.

**Indole** (2,3-Benzopyrrole),  $C_8H_7N$ —**117.14** [120-72-9]—Use a suitable grade.

**Indole-3-carboxylic Acid**,  $C_9H_7NO_2$ —**161.2** [771-50-6]—Use a suitable grade.

**Inosine**,  $C_{10}H_{12}N_4O_5$ —**268.23** [58-63-9]—White, crystalline powder.

*Melting point* (741): about 90°.

**Inositol** (*Hexahydroxycyclohexane*),  $C_6H_6(OH)_6$ —**180.16** [87-89-8]—Fine, white crystals or a white, crystalline powder; stable in air. Its solutions are neutral to litmus. Optically inactive. One g dissolves in 5.7 mL of water. Slightly soluble in alcohol; insoluble in ether and in chloroform. Store in well-closed containers.

*Melting range* (741): between 223° and 226°.

*Loss on drying* (731)—Dry it at 105° for 4 hours: it loses not more than 0.5% of its weight.

**Residue on ignition** (Reagent test): not more than 0.1%.

**Iobenguane Sulfate** (*m-Iodobenzylguanidine Hemisulfate Salt*),  $C_8H_{10}IN_3 \cdot 1/2H_2SO_4$ —**324.1**—White powder. Freely soluble in methanol.

**Assay**—When tested by thin-layer chromatography, with the use of plates coated with chromatographic silica gel mixture, a developing system consisting of a mixture of butyl alcohol, water, and acetic acid (60:25:15), and examined