

1. Reagents and Test Solutions

Helium He Use helium containing not less than 99.995% (vol) of He.

***n*-Hexane** C₆H₁₄ (Hexane, Guaranteed)

***n*-Hexane for Ultraviolet Absorption Spectrophotometry** Determine the absorbance, using distilled water as the reference. The absorbance is not more than 0.10 at a wavelength of 220 nm and not more than 0.02 at 260 nm. No characteristic absorbance is observed at 260 - 350 nm.

Hydrazine (Hydrate) NH₂NH₂ · H₂O (Hydrazine Monohydrate, Guaranteed)

Hydrazine Sulfate [Hydrazinium Sulfate, Guaranteed]

4-Hydrazino-benzene Sulfonic Acid C₆H₈N₂O₃S 4-Hydrazino-benzene Sulfonic Acid occurs as a white to whitish powder.

Specific absorbance:

$E_{1\text{ cm}}^{1\%}$ (absorption maximum near the 253 nm) = Not less than 749.

Weigh 10.0 mg of 4-Hydrazino-benzene Sulfonic Acid, previously dried for 24 hours in a vacuum desiccator, add ammonium acetate solution (3 : 2,000) and dissolve to make exactly 100 ml. Use this solution as solution A. Exactly measure 10 ml of solution A, add ammonium acetate solution (3 : 2,000) to make exactly 100 ml. Measure the absorption of this solution.

Purity: Other aromatic compounds Exactly measure 10 ml of solution A, add ammonium acetate solution (3 : 2,000) to make exactly 100 ml. Measure 20 μl of this solution, perform Liquid Chromatography using the operating conditions directed under Purity (6) for Food Yellow No.4 in the Monographs, JSCFA- . Only one peak is observed.

Hydrindantin C₁₈H₁₀O₆ Hydrindantin occurs as a white powder. It is practically insoluble in water, and freely soluble in dioxane.

Purity: Ninhydrin positive substance Weigh 7 mg of Hydrindantin, dissolve in 10 ml of ninhydrin - ethylene glycol monomethyl ether TS, and heat for 3 minutes. No color develops.

Sensitivity: To 10 ml of a solution of Hydrindantin in ethylene glycol monomethyl ether (1 : 10,000), add 1 ml of ammonia TS. A red color develops.

Loss on drying: Not more than 2.0% (105 °C, 3 hours).

Hydroiodic Acid HI (Hydroiodic Acid, Guaranteed)

Hydrochloric Acid HCl (Guaranteed)

Hydrochloric Acid, Arsenic-free HCl (Hydrochloric Acid for arsenic analysis)

Hydrochloric Acid, Dilute Measure 23.6 ml of hydrochloric acid, and add water to make 100 ml. (10%)

Hydrochloric Acid, Purified HCl Measure 1,000 ml of diluted hydrochloric acid (1 : 2), add 0.3 g of potassium permanganate, and distill. Discard 250 ml of the initial distillate, and collect the subsequent 500 ml of distillate.

Hydrochloric Acid - Ammonium Acetate Buffer (pH 3.5) Weigh 25 g of ammonium acetate, dissolve in 45 ml of 6 mol/l hydrochloric acid, and add water to make 100 ml.

Hydrofluoric Acid HF (Guaranteed)

Hydrogen H₂ Use hydrogen containing more than 99.99% (vol) of H₂.

Hydrogen Arsenide Absorbing Solution Weigh 0.50 g of silver diethyldithio-

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carbamate, and dissolve in pyridine to make 100 ml. Store in a light-resistant bottle with a ground-glass stopper in a cold place.

Hydrogen Peroxide H_2O_2 [Hydrogen Peroxide (Hydrogen Peroxide Water (30%)), Guaranteed]

Hydrogen Peroxide TS Use oxydol specified under the Japanese Pharmacopoeia.

Hydrogen Sulfide H_2S Hydrogen Sulfide is a colorless gas having a characteristic odor, heavier than air, and soluble in water. Prepare by reacting ferrous sulfide with diluted sulfuric acid (1 : 20) or diluted hydrochloric acid (1 : 4).

Hydrogen Sulfide TS Hydrogen Sulfide TS is hydrogen sulfide saturated solution. Store in a small, light-resistant bottle, almost filled, in a cold place, if possible. It has a strong odor of hydrogen sulfide.

2-Hydroxy-1-(2'-hydroxy-4'-sulfo-1'-naphthylazo)-3-naphthoic Acid $\text{C}_{21}\text{H}_{14}\text{N}_2\text{O}_7\text{S}$ (Guaranteed)

5-Hydroxy-1-(4-sulfophenyl)-3-pyrazol Carboxylic Acid $\text{C}_{10}\text{H}_8\text{N}_2\text{O}_6\text{S}$ 5-Hydroxy-1-(4-sulfophenyl)-3-pyrazol Carboxylic Acid occurs as a white to whitish powder.

Specific absorbance: $E_{1\text{ cm}}^{1\%}$ (absorption maximum near the 261 nm) = Not less than 494.

Dry 5-Hydroxy-1-(4-sulfophenyl)-3-pyrazol Carboxylic Acid for 24 hours in a vacuum desiccator, weigh 10.0 mg of it, add ammonium acetate solution (3 : 2,000), and dissolve to make exactly 100 ml. Use this solution as solution A. Measure exactly 10 ml of solution A, and add ammonium acetate solution (3 : 2,000) to make exactly 100 ml. Measure the absorption of this solution.

Purity: Other Aromatic Compounds

Measure exactly 10 ml of the solution A, add ammonium acetate solution (3 : 2,000) to make exactly 100 ml. Measure 20 μl of this solution, perform Liquid Chromatography under the operating conditions directed under Purity (6) for Food Yellow No.4 in the Monographs, JSFA- . Only one peak is observed.

Hydroxyammonium Hydrochloride $\text{NH}_2\text{OH} \cdot \text{HCl}$ (Guaranteed)

Hydroxylamine Hydrochloride See Hydroxyammonium Hydrochloride.

Hydroxylamine TS Weigh 20 g of hydroxylamine hydrochloride, dissolve in 40 ml of water, and add 400 ml of ethanol, 300 ml of 0.5 mol/l ethanolic potassium hydroxide, and 2.5 ml of bromophenol blue - sodium hydroxide TS. Allow to stand for 30 minutes, and filter. Prepare freshly before use.

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- Indigo Carmine** $C_{16}H_8N_2Na_2O_8S_2$ [Indigo Carmine (Sodium Indigo-disulfonate), Guaranteed]
- Indigo Carmine TS** Weigh the amount of indigo carmine equivalent to 0.18 g of indigo carmine ($C_{16}H_8N_2Na_2O_8S_2$), and dissolve in water to make 100 ml. Use within 2 months after preparation.
- Iodine** I_2 (Iodine, Guaranteed)
- Iodine TS** Weigh 14 g of iodine, dissolve in 100 ml of potassium iodide solution (2 5), and add 1 ml of diluted hydrochloric acid (1 4) and water to make 1,000 ml. Store, protecting from light.
- Iodine - Carbon Tetrachloride TS** Weigh 12.5 g of iodine, add 1,000 ml of carbon tetrachloride, and allow to stand overnight to dissolve.
- Iodine - Potassium Iodide TS** Weigh 0.5 g of iodine and 1.5 g of potassium iodide, and dissolve in 25 ml of water.
- Iodine Trichloride** ICl_3 (Iodine trichloride, Guaranteed)
- Iron () Ammonium Sulfate** $Fe(NH_4)_2(SO_4)_2 \cdot 6H_2O$ [Iron() Ammonium Sulfate (Mohr's Salt), Guaranteed]
- Iron () Ammonium Sulfate** $FeNH_4(SO_4)_2 \cdot 12H_2O$ [Iron () Ammonium Sulfate, Dodecahydrate (Iron Alum), Guaranteed]
- Iron () Chloride** $FeCl_3 \cdot 6H_2O$ (Guaranteed)
- Iron Fragment** Fe Use fragmentary iron containing not less than 97.7% of Fe. It is attracted by a magnet.
- Iron() Sulfate** $FeSO_4 \cdot 7H_2O$ (Guaranteed)
- Iron() Sulfate** $Fe_2(SO_4)_3 \cdot 7H_2O$ (Guaranteed)
- Iron () Sulfide** FeS [Iron() Sulfide (for generation of hydrogen sulfide)]
- Isoamyl Acetate** See 3-Methyl-butyl Acetate.
- Isoamyl Alcohol** See Amyl Alcohol, Iso.
- Isobutyl Alcohol** See Butyl Alcohol, Iso.
- Isooctane** See Octane, Iso.
- Isopropyl Alcohol** See Propyl Alcohol, Iso.
- Isopropyl Alcohol for Vitamin A Determination** See Propyl Alcohol, Iso, for Vitamin A Determination.

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Lactic Acid $\text{CH}_3\text{CH}(\text{OH})\text{COOH}$ (Guaranteed)

Lactic Acid TS Weigh 12.0 g of lactic acid, add water, and dissolve to make 100 ml.

Lactose See Lactose Monohydrate.

Lactose Broth After adding lactose monohydrate to general bouillon in the ratio of 0.5%, add about 12 ml of bromothymol blue - sodium hydroxide TS to 1,000 ml of the medium. Then, dispense about 10 ml into each of the several tubes for fermentation, and either sterilize them at 100 °C for 15 to 30 minutes once a day on three successive days by using a steam sterilizer, or autoclave them one time for about 20 minutes at 121 °C, and cool by immersing in cold water.

Lactose Monohydrate $\text{C}_{12}\text{H}_{22}\text{O}_{11} \cdot \text{H}_2\text{O}$ Use lactose specified under the Japanese Pharmacopoeia.

Lead Acetate $\text{Pb}(\text{CH}_3\text{COO})_2 \cdot 3\text{H}_2\text{O}$ [Lead Acetate (Trihydrate), Guaranteed]

Lead Acetate TS Weigh 11.8 g of lead acetate, dissolve in water to make 100 ml, and add 2 drops of diluted acetic acid (1 : 4). Store in a tight-stoppered container.

Lead Acetate TS, Basic Weigh 3 g of lead acetate and 1 g of lead monoxide, add 0.5 ml of water, and triturate them. Transfer the resultant yellowish mixture into a beaker, cover with a watch glass, and heat on a water bath. When the contents have turned uniformly white to reddish white, add 9.5 ml of boiling water in small portions, cover again with the watch glass, and allow to stand. Collect the supernatant by decantation, and add water to make the specific gravity $d_{20}^{20} = 1.23 - 1.24$.

Store in a tight-stoppered container.

Lead Monoxide See Lead() Oxide.

Lead Nitrate $\text{Pb}(\text{NO}_3)_2$ (Guaranteed)

Lead() Oxide PbO (Guaranteed)

Light Green SF Yellow $\text{C}_{37}\text{H}_{34}\text{N}_2\text{Na}_2\text{O}_9\text{S}_3$ Light Green SF Yellow is disodium 4-{bis [4-(*N*-ethyl-*N*-3-sulfonatophenylmethyl) amino phenyl] methyl} benzene sulfonate, and occurs as darkish green granules or a darkish green powder. Add 1 ml of sodium hydroxide solution (1 : 10) to 5 ml of the aqueous solution of Light Green SF Yellow (1 : 1,000). The color of the solution changes to light green.

Specific absorbance: Weigh 10.0 mg of Light Green SF Yellow, dissolve in ammonium acetate solution (3 : 2,000) to make exactly 100 ml. Measure exactly 10 ml of this solution, and add ammonium acetate solution (3 : 2,000) to make exactly 100 ml. The solution exhibits the absorption maximum at a wavelength of 631 - 635 nm. The specific absorbance of Light Green SF Yellow is not less than 606.

Liquid Paraffin See Paraffin, Liquid.

Lithium Acetate $\text{CH}_3\text{COOLi} \cdot 2\text{H}_2\text{O}$ Lithium Acetate occurs as colorless or white crystals. It is freely soluble in water.

Melting point: 70 °C.

Clarity and color of solution: Colorless, almost clear (0.5 g, water 10 ml).

Lithium Acetate Buffer Weigh 40.8 g of lithium acetate, and dissolve in water to make 100 ml. Adjust the pH to 9 with sodium hydroxide solution (1 : 25).

Lithium Lactate $\text{LiC}_3\text{H}_5\text{O}_3$ Lithium Lactate occurs as a white powder or white crystals, having no odor.

pH: 6.0 - 7.5 (1.0 g, water 20 ml).

Residue on Ignition: 56.5 - 58.0% (use Lithium Lactate after drying at 105 °C).

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4 hours)

Lithium Sulfate $\text{Li}_2\text{SO}_4 \cdot \text{H}_2\text{O}$ (Guaranteed)

Litmus Paper, Blue (Litmus Paper, Blue Litmus Paper)

Litmus Paper, Red (Litmus Paper, Red Litmus Paper)

L-Lysine Monohydrochloride $\text{H}_2\text{N}(\text{CH}_2)_4 \text{CH}(\text{NH}_2)\text{COOH} \cdot \text{HCL}$ (L-Lysine Monohydrochloride, Guaranteed)