U.S.
PHARMACOPOEIA
PRODUCTS

Reagents, Indicators, and Solutions

This section deals with the solutions required in conducting the Pharmacopeial and the National Formulary tests and assays. Reagents are substances used either as such or as constituents of solutions. Indicators are reagents used to determine the specified end-point in a chemical reaction, to measure hydrogen-ion concentration (pH), or to indicate that a desired change in pH has been effected. They are listed together with indicator test papers. Buffer Solutions are referred to separately. Colorimetric Solutions, abbreviated CS, are solutions used in the preparation of colorimetric standards for comparison purposes. Test Solutions, abbreviated TS, are solutions of reagents in such solvents and of such definite concentrations as to be suitable for the specified purposes. Volumetric Solutions, abbreviated VS and known also as Standard Solutions, are solutions of reagents of known concentration intended primarily for use in quantitative determinations. Concentrations are usually expressed in terms of normality. Water - Purified Water (USP monograph) is always used. Carbon dioxide-free water is purified water that has been boiled vigorously for 5 minutes or more and allowed to cool while protected from absorption of carbon dioxide from the atmosphere, or Purified Water that has a resistivity of not less than 18 Mohm-cm. Deaerated water, for purposes other than dissolution and drug release testing, is Purified Water that has been treated to reduce the content of dissolved air by suitable means, such as by boiling vigorously for 5 minutes and cooling or by the application of ultrasonic vibration.

Solutions acc. to Reagent Specifications

Ref. Number	Description	Volume	Msr
USP350	Acetic Acid, Diluted	1000	ml
USP351.L1	Alcohol (70 percent)	100	ml
USP352.L1	Alcohol (80 percent)	100	ml
USP353.L1	Alcohol (90 percent)	100	ml
USP355	Alcohol, Aldehyde-free	1000	ml
USP356	Ammonium Hydroxide, 6 N	1000	ml
USP362	Hydrochloric Acid, Diluted (10 percent)	1000	ml
USP354.L3	Kit of alcoholic solutions (70%, 80%, 90%)	100+100+100	ml
USP363.1L	Methanol, Aldehyde-Free	1000	ml
USP364	Nitric Acid, Diluted (10 percent)	1000	ml
USP366.L5	Potassium Iodate solution 0.25N	500	ml
USP367	Sulfuric Acid, Diluted (10 percent)	1000	ml

Indicator & Test Papers

Indicator and test papers are strips of paper of suitable dimension and grade impregnated with an indicator or a reagent that is sufficiently stable to provide a convenient form of the impregnated substance.

Ref. Number	Description	Volume	Msr
USP068	Cupric Sulfate Test Paper	1	pack of 50
USP069	Lead Acetate Test Paper	1	pack of 50
USP422	Litmus Paper Blue	1	pack of 50
USP423	Litmus Paper Red	1	pack of 50
USP070	Mercuric Bromide Test Paper	1	pack of 50
USP071	Methyl Yellow Paper	1	pack of 50
USP072	Phenolphthalein Paper	1	pack of 50
USP073	Starch Iodate Paper	1	pack of 50
USP074	Starch Iodide Paper	1	pack of 50
USP075	Thiazole Yellow Paper	1	pack of 50

Test Solutions (TS)

Certain of the following test solutions are intended for use as acid-base indicators in volumetric analyses. Similar solutions are intended for use in pH measurement. Where it is directed that a volumetric solution be used as the test solution, standardization of the solution used as TS is not required.

Ref. Number	Description	Volume	Msr
USP264	2-Naphthol TS (Betanaphthol TS)	100	ml
USP255	3-Methyl-2-benzothiazolinone Hydrazone Hydrochloride TS	100	ml
USP228	8-Hydroxyquinoline TS	100	ml
USP140	Acetate Buffer TS	1000	ml
USP487	Acetic Acid 0.008M TS	1000	ml
USP488	Acetic Acid 0.3N TS	1000	ml
USP485	Acetic Acid 1M TS	1000	ml
USP486	Acetic Acid 2M TS	1000	ml
USP424	Acetic Acid, Strong, TS	1000	ml
USP141	Acetic Acid-Ammonium Acetate Buffer TS	1000	ml
USP142	Acetone, Buffered, TS	1000	ml
USP143	Acid Ferric Chloride TS	100	ml
USP146	Alcohol-Phenol TS	100	ml
USP206	Alkaline Tartrate Solution (B)	500	ml
USP156	Amaranth TS	100	ml
USP159	Ammonia TS	1000	ml
USP159a	Ammonia TS	500	ml
USP425	Ammonia TS 2	1000	ml
USP157	Ammonia-Ammonium Chloride Buffer TS	1000	ml
USP160	Ammoniacal Potassium Ferricyanide TS	500	ml
USP160a	Ammoniacal Potassium Ferricyanide TS	100	ml
USP158	Ammonia-Cyanide TS	100	ml

Ref. Number	Description	Volume	Msr
USP162	Ammonium Acetate TS	100	ml
USP162a	Ammonium Acetate TS	1000	ml
USP163	Ammonium Carbonate TS	100	ml
USP163a	Ammonium Carbonate TS	500	ml
USP426	Ammonium Carbonate TS2	100	ml
USP164	Ammonium Chloride TS	100	ml
USP164a	Ammonium Chloride TS	1000	ml
USP165	Ammonium Chloride-Ammonium Hydroxide TS	100	ml
USP165a	Ammonium Chloride-Ammonium Hydroxide TS	500	ml
USP454	Ammonium Hydroxide 1M TS	1000	ml
USP455	Ammonium Hydroxide 2M TS	1000	ml
USP166	Ammonium Molybdate TS	100	ml
USP166a	Ammonium Molybdate TS	500	ml
USP167	Ammonium Oxalate TS	100	ml
USP167a	Ammonium Oxalate TS	1000	ml
USP168	Ammonium Phosphate, Dibasic, TS (Ammonium Phosphate TS)	100	ml
USP168a	Ammonium Phosphate, Dibasic, TS (Ammonium Phosphate TS)	500	ml
USP169	Ammonium Thiocyanate TS	100	ml
USP169a	Ammonium Thiocyanate TS	1000	ml
USP170	Ammonium Vanadate TS	500	ml
USP170a	Ammonium Vanadate TS	1000	ml
USP171	Antimony Trichloride TS	100	ml
USP427	Ascorbic Acid 10% TS	100	ml
USP172	Barium Chloride TS	100	ml
USP172a	Barium Chloride TS	1000	ml
USP173	Barium Nitrate TS	100	ml
USP173a	Barium Nitrate TS	500	ml
USP174	Biuret Reagent TS	1000	ml
USP175	Blue Tetrazolium TS	100	ml
USP176	Brilliant Blue G TS	100	ml
USP177	Bromine TS	100	ml
USP178	Bromine-Sodium Acetate TS	100	ml
USP178a	Bromine-Sodium Acetate TS	500	ml
USP180	Bromocresol Green TS	100	ml
USP181	Bromocresol Green-Methyl Red TS	100	ml
USP182	Bromocresol Purple TS	100	ml
USP182a	Bromocresol Purple TS	500	ml
USP183	Bromophenol Blue TS	100	ml
USP184	Bromothymol Blue TS	100	ml
USP186	Calcium Chloride TS	100	ml
USP186a	Calcium Chloride TS	500	ml
USP188	Chloral Hydrate TS	100	ml
USP189	Chromotropic Acid TS	100	ml
USP500	Citric Acid TS	100	ml
USP191	Cobaltous Chloride TS	100	ml
USP191a	Cobaltous Chloride TS	500	ml
USP190	Cobalt-Uranyl Acetate TS	100	ml
USP192	Congo Red TS	100	ml

Ref. Number	Description	Volume	Msr
USP205	Copper Solution (A)	500	ml
USP194	Cresol Red TS	100	ml
USP194a	Cresol Red TS	250	ml
USP195	Cresol Red-Thymol Blue TS	100	ml
USP196	Crystal Violet TS	100	ml
USP197	Cupric Acetate TS	100	ml
USP198	Cupric Acetate TS, Stronger (Barfoed's Reagent)	100	ml
USP198a	Cupric Acetate TS, Stronger (Barfoed's Reagent)	500	ml
USP199	Cupric Citrate TS	100	ml
USP199a	Cupric Citrate TS	1000	ml
USP200	Cupric Citrate TS, Alkaline	100	ml
USP200a	Cupric Citrate TS, Alkaline	1000	ml
USP201	Cupric Iodide TS, Alkaline	100	ml
USP201a	Cupric Iodide TS, Alkaline	1000	ml
USP202	Cupric Oxide, Ammoniated, TS (Schweitzer's Reagent)	100	ml
USP203	Cupric Sulfate TS	100	ml
USP203a	Cupric Sulfate TS	500	ml
USP204	Cupric Tartrate Alkaline Solution (Fehling’s Solution) (A+B)	1000	ml
USP468	Dibasic Potassium Phosphate 0.2M TS	1000	ml
USP210	Dichlorofluorescein TS	100	ml
USP212	Dinitrophenylhydrazine TS	100	ml
USP213	Diphenylamine TS	100	ml
USP213a	Diphenylamine TS	500	ml
USP214	Diphenylcarbazone TS	100	ml
USP215	Dragendorff's TS (A+B)	100	ml
USP456	Edetate Disodium 0.01M TS	1000	ml
USP216a	Edetate Disodium TS	1000	ml
USP217	Eosin Y TS	100	ml
USP218	Eriochrome Black TS	100	ml
USP219	Eriochrome Cyanine TS	100	ml
USP221	Ferric Ammonium Sulfate TS	100	ml
USP221a	Ferric Ammonium Sulfate TS	1000	ml
USP222	Ferric Chloride TS	100	ml
USP222a	Ferric Chloride TS	1000	ml
USP223	Ferroin TS	100	ml
USP224	Folin-Ciocalteu Phenol TS	100	ml
USP224a	Folin-Ciocalteu Phenol TS	1000	ml
USP225	Formaldehyde TS	100	ml
USP226	Glycerin Base TS	100	ml
USP428	Hydrochloric Acid TS 0.001N	1000	ml
USP457	Hydrochloric Acid TS 0.01N	1000	ml
USP458	Hydrochloric Acid TS 0.025N	1000	ml
USP459	Hydrochloric Acid TS 0.05N	1000	ml
USP429	Hydrochloric Acid TS 0.06N	1000	ml
USP489	Hydrochloric Acid TS 0.08N	1000	ml
USP490	Hydrochloric Acid TS 0.125N	1000	ml
USP430	Hydrochloric Acid TS 0.36N	1000	ml
USP431	Hydrochloric Acid TS 2N	1000	ml

Ref. Number	Description	Volume	Msr
USP432	Hydrochloric Acid TS 3N	1000	ml
USP433	Hydrochloric Acid TS 6N	1000	ml
USP227	Hydroxylamine Hydrochloride TS	100	ml
USP229	Indigo Carmine TS	100	ml
USP232.L1	Iodine and Potassium Iodide TS 1	100	ml
USP511	Iodine and Potassium Iodide TS 3	100	ml
USP231	Iodine, Diluted TS	1000	ml
USP233	Iodobromide TS	100	ml
USP233a	Iodobromide TS	500	ml
USP234.1L	Iodochloride TS	1000	ml
USP235.L1	Iron Salicylate TS	100	ml
USP235.L5	Iron Salicylate TS	500	ml
USP434	Lanthanum Nitrate TS	100	ml
USP484.10G	Lead acetate cotton	10	g
USP236	Lead Acetate TS	100	ml
USP237	Lead Acetate TS, Alcoholic	100	ml
USP237a	Lead Acetate TS, Alcoholic	500	ml
USP435	Lead Nitrate Stock Solution TS	100	ml
USP238.L1	Lead Subacetate TS	100	ml
USP239	Lead Subacetate TS, Diluted	100	ml
USP240.L25	Litmus TS	250	ml
USP241	Magnesia Mixture TS	100	ml
USP242.L1	Magnesium Sulfate TS	100	ml
USP243	Malachite Green TS	100	ml
USP193	m-Cresol Purple TS	100	ml
USP245	Mercuric Acetate TS	100	ml
USP247	Mercuric Bromide TS, Alcoholic	100	ml
USP248	Mercuric Chloride TS	100	ml
USP248a	Mercuric Chloride TS	500	ml
USP249	Mercuric Iodide TS (Valser's Reagent)	100	ml
USP250	Mercuric Nitrate TS	100	ml
USP253	Mercuric Sulfate TS (Deniges' Reagent)	100	ml
USP253a	Mercuric Sulfate TS (Deniges' Reagent)	500	ml
USP246	Mercuric-Ammonium Thiocyanate TS	500	ml
USP246a	Mercuric-Ammonium Thiocyanate TS	1000	ml
USP251	Mercuric-Potassium Iodide TS (Mayer's Reagent)	100	ml
USP252	Mercuric-Potassium Iodide TS, Alkaline (Nessler's Reagent)	500	ml
USP252a	Mercuric-Potassium Iodide TS, Alkaline (Nessler's Reagent)	1000	ml
USP254	Mercurous Nitrate TS	100	ml
USP256	Methyl Orange TS	100	ml
USP257	Methyl Red TS	100	ml
USP259	Methyl Yellow TS	100	ml
USP260	Methyl Yellow-Methylene Blue TS	100	ml
USP261	Methylene Blue TS	100	ml
USP262	Methylthionine Perchlorate TS	100	ml
USP262a	Methylthionine Perchlorate TS	500	ml
USP263	Molybdo-phosphotungstate TS	100	ml
USP467	Monobasic Potassium Phosphate 0.02M TS	1000	ml

Ref. Number	Description	Volume	Msr
USP266	N-(1-Naphthyl)ethylenediamine Dihydrochloride TS	100	ml
USP268	Neutral Red TS	100	ml
USP269	Nickel Standard Solution TS (100 times concentrated)	100	ml
USP368	Nitric Acid 0.01N TS	1000	ml
USP369	Nitric Acid 0.2N TS	1000	ml
USP370	Nitric Acid 1N TS	1000	ml
USP371	Nitric Acid 2N TS	1000	ml
USP358	Oracet Blue B TS (acc to old USP)	100	ml
USP271	Orthophenanthroline TS	100	ml
USP272	Oxalic Acid TS	500	ml
USP272a	Oxalic Acid TS	1000	ml
USP273	Palladium Chloride TS, Buffered	100	ml
USP274	Perchloric Acid TS	100	ml
USP274a	Perchloric Acid TS	500	ml
USP275	Phenol Red TS	100	ml
USP275a	Phenol Red TS	500	ml
USP276	Phenol Red TS pH 4.7	100	ml
USP276a	Phenol Red TS pH 4.7	500	ml
USP277	Phenoldisulfonic Acid TS	100	ml
USP278	Phenolphthalein TS	100	ml
USP279	Phenylhydrazine Acetate TS	100	ml
USP279a	Phenylhydrazine Acetate TS	500	ml
USP280	Phenylhydrazine-Sulfuric Acid TS	100	ml
USP280a	Phenylhydrazine-Sulfuric Acid TS	500	ml
USP281	Phloroglucinol TS	20	ml
USP282	Phosphomolybdic Acid TS	100	ml
USP282a	Phosphomolybdic Acid TS	500	ml
USP493	Phosphoric Acid 0.02M TS	1000	ml
USP436	Phosphoric Acid 10% TS	100	ml
USP505	Phosphoric Acid 1M TS	1000	ml
USP463	Phosphoric Acid 20% TS	1000	ml
USP460	Phosphoric Acid TS 0.05M	1000	ml
USP461	Phosphoric Acid TS 0.06M	1000	ml
USP491	Phosphoric Acid TS 0.75M	1000	ml
USP492	Phosphoric Acid TS 1.5M	1000	ml
USP462	Phosphoric Acid TS 1N	1000	ml
USP283	Phosphotungstic Acid TS	100	ml
USP265	p-Naphtholbenzein TS	100	ml
USP270	p-Nitroaniline TS	100	ml
USP270a	p-Nitroaniline TS	500	ml
USP286	Potassium Acetate TS	100	ml
USP286a	Potassium Acetate TS	500	ml
USP288	Potassium Carbonate TS	100	ml
USP288a	Potassium Carbonate TS	500	ml
USP289	Potassium Chromate TS	100	ml
USP290	Potassium Dichromate TS	100	ml
USP290a	Potassium Dichromate TS	500	ml
USP464	Potassium Hydroxide 1.8N TS	1000	ml

Ref. Number	Description	Volume	Msr
USP465	Potassium Hydroxide 2N TS	1000	ml
USP466	Potassium Hydroxide 45% TS	100	ml
USP291	Potassium Hydroxide TS	100	ml
USP292	Potassium Hydroxide TS 0.5N, Alcoholic	100	ml
USP294	Potassium Iodide 20% TS	100	ml
USP294a	Potassium Iodide 20% TS	500	ml
USP295	Potassium Iodide and Starch TS	100	ml
USP296	Potassium Iodoplatinate TS	100	ml
USP299	Potassium Pyroantimonate TS	100	ml
USP300	Potassium Sulfate TS	100	ml
USP300a	Potassium Sulfate TS	500	ml
USP301	Potassium Thiocyanate TS	100	ml
USP301a	Potassium Thiocyanate TS	500	ml
USP287	Potassium-Bismuth Iodide TS	500	ml
USP347	p-Toluenesulfonic Acid TS	100	ml
USP302	Quinaldine Red TS	100	ml
USP303	Resorcinol TS	100	ml
USP304	Ruthenium Red TS	100	ml
USP306	Silver-Ammonia-Nitrate TS	30	ml
USP310	Sodium Acetate TS	100	ml
USP311	Sodium Alizarinsulfonate TS	100	ml
USP312	Sodium Aminoacetate TS (Sodium Glycinate TS)	500	ml
USP312a	Sodium Aminoacetate TS (Sodium Glycinate TS)	1000	ml
USP313	Sodium Carbonate TS	100	ml
USP313a	Sodium Carbonate TS	1000	ml
USP314	Sodium Chloride TS, Alkaline	100	ml
USP315	Sodium Citrate TS	250	ml
USP316	Sodium Citrate TS, Alkaline	250	ml
USP318	Sodium Fluoride TS	100	ml
USP469	Sodium Hydroxide 0.0025N TS	1000	ml
USP470	Sodium Hydroxide 0.02N TS	1000	ml
USP471	Sodium Hydroxide 0.2N TS	1000	ml
USP475	Sodium Hydroxide 10N TS	1000	ml
USP473	Sodium Hydroxide 2.5N TS	1000	ml
USP472	Sodium Hydroxide 2N TS	1000	ml
USP474	Sodium Hydroxide 5N TS	1000	ml
USP319	Sodium Hydroxide TS	100	ml
USP319a	Sodium Hydroxide TS	1000	ml
USP320	Sodium Iodohydroxyquinolinesulfonate TS	250	ml
USP322	Sodium Phosphotungstate TS	100	ml
USP323	Sodium Tartrate TS	100	ml
USP323a	Sodium Tartrate TS	500	ml
USP324	Sodium Tetraphenylboron TS	100	ml
USP503	Sodium Tetraphenylboron TS	200	ml
USP329	Stannous Chloride, Acid, Stronger, TS	100	ml
USP328	Stannous Chloride, Acid, TS	100	ml
USP330	Starch Iodide Paste TS	100	ml
USP331	Starch TS	100	ml

Ref. Number	Description	Volume	Msr
USP333.L05	Sudan III TS	100	ml
USP334	Sudan IV TS	100	ml
USP335	Sulfanilic Acid TS	100	ml
USP335a	Sulfanilic Acid TS	500	ml
USP337	Sulfanilic-1-Naphthylamine TS	100	ml
USP338	Sulfomolybdic Acid TS	100	ml
USP338a	Sulfomolybdic Acid TS	500	ml
USP477	Sulfuric Acid 0.02N TS	1000	ml
USP478	Sulfuric Acid 0.2N TS	1000	ml
USP479	Sulfuric Acid 0.5N TS	1000	ml
USP476	Sulfuric Acid 1M TS	1000	ml
USP480	Sulfuric Acid 2N TS	1000	ml
USP481	Sulfuric Acid 6N TS	1000	ml
USP482	Sulfuric Acid 7N TS	1000	ml
USP339	Sulfuric Acid TS	100	ml
USP340	Tetramethylammonium Hydroxide TS	100	ml
USP341	Thioacetamide TS	100	ml
USP343	Thymol Blue TS	100	ml
USP344	Thymolphthalein TS	100	ml
USP345	Titanium Trichloride TS	100	ml
USP346	Titanium Trichloride-Sulfuric Acid TS	100	ml
USP494	Trifluoroacetic Acid 0.1% TS	1000	ml
USP348	Trinitrophenol TS (Picric Acid TS)	100	ml
USP349	Triphenyltetrazolium Chloride TS	100	ml
USP349a	Triphenyltetrazolium Chloride TS	500	ml
USP442.50G	Xylenol orange triturate	50	g
USP437	Xylenol Orange TS	100	ml
USP357	Zinc Uranyl Acetate TS	100	ml

Limit Test

Ref. Number	Description	Volume	Msr
USP421	Acetic Acid (6 N Acetic Acid)	1000	ml
USP407	Aluminium standard for limit test (1 ug/ml)	100	ml
USP400	Ammonium citrate solution	100	ml
USP411	Ammonium thiocyanate solution - 300 g/l (Iron limit test)	100	ml
USP401	Diluted standard lead solution (Lead limit test)	100	ml
USP402	Dithizone extraction solution	100	ml
USP412	Dithizone stock solution - 40 mg/l in chloroform (Mercury limit test)	1000	ml
USP413	Dithizone titrant - 12 mg/l in chloroform (Mercury limit test)	1000	ml
USP403	Hydroxylamine hydrochloride solution	100	ml
USP415	Mercury solution for standardizing dithizone titrant - 20 ug/ml (Mercury limit test)	100	ml
USP414	Mercury stock solution (Mercury limit test)	100	ml
USP409	N,N-dimethylaniline 1000 mg/l in diluted hydrochloric acid - Standard Solution (Limit test for Dimethylanailine)	5	ml
USP408	Naphthalene 50ug/ml in cyclohexane - Internal Standard Solution (Limit test for Dimethylanailine)	10	ml
USP406	Nitric Acid Diluent	100	ml
USP404	Potassium cyanide solution	100	ml
USP416	Potassium Permanganate Solution	100	ml
USP416.1L	Potassium Permanganate Solution	1000	ml
USP418	Selenium Standard Solution (Selenium limit test)	100	ml
USP417	Selenium Stock Solution - 1 ug/ml (Selenium limit test)	100	ml
USP405	Standard dithizone solution	500	ml
USP410	Standard Iron solution (10 ug/ml)	100	ml
USP420	Trichloroacetic acid solution (100 g/l)	1000	ml
USP419	Zinc standard solution (Zinc limit test)	100	ml

General tests for Reagents

The following solutions are provided to help for the examination of reagents to determine their compliance with the specifications of the individual reagents.

Ref. Number	Description	Volume	Msr
USP076	Arsenic Trioxide Stock Solution	100	ml
USP084	Brucine Sulfate Solution	100	ml
USP082	Lead Nitrate Stock Solution TS	100	ml
USP086	Phosphate Reagent A	100	ml
USP506	Sodium periodate solution	1000	ml
USP078	Standard Calcium Solution	100	ml
USP077	Standard Chloride Solution	100	ml
USP083	Standard Nitrate Solution	100	ml
USP085	Standard Phosphate Solution	100	ml
USP079	Standard Potassium Solution	100	ml
USP080	Standard Sodium Solution	100	ml
USP081	Standard Strontium Solution	100	ml
USP087	Standard Sulphate Solution	100	ml

Buffer Solutions

The successful completion of many Pharmacopeial tests and assays requires adjustment to or maintenance solutions. In pH measurements, standard buffer solutions are required for reference purposes A solution is said to be buffered if it resists changes in the activity of an ion on the addition of substances that ion. Buffers are substances or combinations of substances that impart this resistance to a solution. Buffered equilibrium with substances capable of removing or releasing the ion. Buffer capacity refers to the amount of material that may be added to a solution without causing a significant ratio of acid or base added (in gram-equivalents per liter) to the change in pH (in pH units). The capacity of a conditions of use, usually by adjustment of the concentrations of buffer substances. Buffers are used to establish and maintain an ion activity within narrow limits. The most common systems are for the calibration of pH meters, (b) in the preparation of dosage forms that approach isotonicity, (c) in analytical stability of various dosage forms.

Ref. Number	Description	Volume	Msr
USP064	Acetate Buffer pH 3.5 for Heavy metals	1000	ml
USP054	Acetate Buffer pH 4.1	1000	ml
USP055	Acetate Buffer pH 4.3	1000	ml
USP056	Acetate Buffer pH 4.5	1000	ml
USP057	Acetate Buffer pH 4.7	1000	ml
USP058	Acetate Buffer pH 4.9	1000	ml
USP059	Acetate Buffer pH 5.1	1000	ml
USP060	Acetate Buffer pH 5.2	1000	ml
USP061	Acetate Buffer pH 5.3	1000	ml
USP062	Acetate Buffer pH 5.4	1000	ml
USP063	Acetate Buffer pH 5.5	1000	ml
USP012	Acid Phthalate Buffer pH 2.2	1000	ml
USP013	Acid Phthalate Buffer pH 2.4	1000	ml
USP014	Acid Phthalate Buffer pH 2.6	1000	ml
USP015	Acid Phthalate Buffer pH 2.8	1000	ml
USP016	Acid Phthalate Buffer pH 3.0	1000	ml
USP017	Acid Phthalate Buffer pH 3.2	1000	ml
USP018	Acid Phthalate Buffer pH 3.4	1000	ml
USP019	Acid Phthalate Buffer pH 3.6	1000	ml
USP020	Acid Phthalate Buffer pH 3.8	1000	ml
USP021	Acid Phthalate Buffer pH 4.0	1000	ml
USP053	Alkaline Borate Buffer pH 10.0	1000	ml
USP043	Alkaline Borate Buffer pH 8.0	1000	ml
USP044	Alkaline Borate Buffer pH 8.2	1000	ml
USP045	Alkaline Borate Buffer pH 8.4	1000	ml
USP046	Alkaline Borate Buffer pH 8.6	1000	ml
USP047	Alkaline Borate Buffer pH 8.8	1000	ml
USP048	Alkaline Borate Buffer pH 9.0	1000	ml
USP049	Alkaline Borate Buffer pH 9.2	1000	ml
USP050	Alkaline Borate Buffer pH 9.4	1000	ml

Ref. Number	Description	Volume	Msr
USP051	Alkaline Borate Buffer pH 9.6	1000	ml
USP052	Alkaline Borate Buffer pH 9.8	1000	ml
USP001	Hydrochloric Acid Buffer pH 1.2	1000	ml
USP002	Hydrochloric Acid Buffer pH 1.3	1000	ml
USP003	Hydrochloric Acid Buffer pH 1.4	1000	ml
USP004	Hydrochloric Acid Buffer pH 1.5	1000	ml
USP005	Hydrochloric Acid Buffer pH 1.6	1000	ml
USP006	Hydrochloric Acid Buffer pH 1.7	1000	ml
USP007	Hydrochloric Acid Buffer pH 1.8	1000	ml
USP008	Hydrochloric Acid Buffer pH 1.9	1000	ml
USP009	Hydrochloric Acid Buffer pH 2.0	1000	ml
USP010	Hydrochloric Acid Buffer pH 2.1	1000	ml
USP011	Hydrochloric Acid Buffer pH 2.2	1000	ml
USP022	Neutralized Phthalate Buffer pH 4.2	1000	ml
USP023	Neutralized Phthalate Buffer pH 4.4	1000	ml
USP024	Neutralized Phthalate Buffer pH 4.6	1000	ml
USP025	Neutralized Phthalate Buffer pH 4.8	1000	ml
USP026	Neutralized Phthalate Buffer pH 5.0	1000	ml
USP027	Neutralized Phthalate Buffer pH 5.2	1000	ml
USP028	Neutralized Phthalate Buffer pH 5.4	1000	ml
USP029	Neutralized Phthalate Buffer pH 5.6	1000	ml
USP030	Neutralized Phthalate Buffer pH 5.8	1000	ml
USP031	Phosphate Buffer pH 5.8	1000	ml
USP032	Phosphate Buffer pH 6.0	1000	ml
USP033	Phosphate Buffer pH 6.2	1000	ml
USP034	Phosphate Buffer pH 6.4	1000	ml
USP035	Phosphate Buffer pH 6.6	1000	ml
USP036	Phosphate Buffer pH 6.8	1000	ml
USP037	Phosphate Buffer pH 7.0	1000	ml
USP038	Phosphate Buffer pH 7.2	1000	ml
USP039	Phosphate Buffer pH 7.4	1000	ml
USP040	Phosphate Buffer pH 7.6	1000	ml
USP041	Phosphate Buffer pH 7.8	1000	ml
USP042	Phosphate Buffer pH 8.0	1000	ml

Colorimetric Solutions (CS) USP

These solutions are used in the preparation of the colorimetric standards for certain drugs, and for the carbonization tests with sulfuric acid that are specified in several monographs. Comparison of colors as directed in the Pharmacopeial tests preferably is made in matched color-comparison tubes or in a suitable colorimeter under conditions that ensure that the colorimetric reference solution and that of the specimen under test are treated alike in all respects. The comparison of colors is best made in layers of equal depth, and viewed transversely against a white background (see also Visual Comparison under Spectrophotometry and Light-Scattering 851). It is particularly important that the solutions be compared at the same temperature, preferably 25°C .

Ref. Number	Description	Volume	Msr
USP065	Cobaltous Chloride CS	100	ml
USP065.L5	Cobaltous Chloride CS	500	ml
USP066	Cupric Sulfate CS	100	ml
USP066.L5	Cupric Sulfate CS	500	ml
USP067	Ferric Chloride CS	100	ml
USP067.L5	Ferric Chloride CS	500	ml
USP501	Matching Fluids for Color - kit of 20 fluids (A-T), 20x10ml	20x10	ml

Volumetric Solutions

Normal Solutions - Normal solutions are solutions that contain 1 gram equivalent weight of the active substance in each 1000 mL of solution; that is, an amount equivalent to 1.0079 g of hydrogen or 7.9997 g of oxygen. Normal solutions and solutions bearing a specific relationship to normal solutions, and used in volumetric determinations, are designated as follows: normal, 1 N; double-normal, 2 N; half-normal, 0.5 N; tenth-normal, 0.1 N; fiftiethnormal, 0.02 N; hundredth-normal, 0.01 N; thousandth-normal, 0.001 N. Molar Solutions - Molar solutions are solutions that contain, in 1000 mL, 1 grammolecule of the reagent. Solutions containing, in 1000 mL, one-tenth of a grammolecule of the reagent are designated tenth-molar,“ 0.1 M; and other molarities are similarly indicated. Empirical Solutions - It is frequently difficult to prepare standard solutions of a desired theoretical normality, and this is not essential. A solution of approximately the desired normality is prepared and standardized by titration against a primary standard solution. The normality factor so obtained is used in all calculations where such empirical solutions are employed.

Ref. Number	Description	Volume	Msr
USP088	Acetic Acid 2N VS	1000	ml
USP089	Ammonium Thiocyanate 0.1N VS	1000	ml
USP495	Barium Perchlorate 0.05M VS	1000	ml
USP438	Benzethonium Chloride, Two Hundred Fiftieth-Molar (0.004 M)	1000	ml
USP439	Bismuth Nitrate 0.01M VS	1000	ml
USP090	Bromine 0.1N VS	1000	ml
USP091	Ceric Ammonium Nitrate 0.05N VS	1000	ml

Ref. Number	Description	Volume	Msr
USP092	Ceric Sulfate 0.1N VS	1000	ml
USP093	Cupric Nitrate 0.1N VS	1000	ml
USP509	Edetate Disodium 0.02M VS	1000	ml
USP094	Edetate Disodium 0.05M VS	1000	ml
USP440	Edetate Disodium 0.1M VS	1000	ml
USP095	Ferric Ammonium Sulfate 0.1N VS	1000	ml
USP096	Ferrous Ammonium Sulfate 0.1N VS	1000	ml
USP446	Hydrochloric Acid 0.02N VS	1000	ml
USP447	Hydrochloric Acid 0.1N VS	1000	ml
USP099	Hydrochloric Acid 0.5N in Methanol VS	1000	ml
USP098	Hydrochloric Acid 0.5N VS	1000	ml
USP097	Hydrochloric Acid 1N VS	1000	ml
USP100	Hydrochloric Acid Alcoholic 0.1M VS	1000	ml
USP102	Iodine 0.01N VS	1000	ml
USP441	Iodine 0.05N VS	1000	ml
USP101	Iodine 0.1N VS	1000	ml
USP103	Lead Nitrate 0.01M VS	1000	ml
USP104	Lead Nitrate 0.1M	1000	ml
USP106	Lead Perchlorate 0.01M VS	1000	ml
USP105	Lead Perchlorate 0.1M VS	1000	ml
USP443	Magnesium Chloride 0.01M VS	1000	ml
USP111	Mercuric Nitrate 0.1M VS	1000	ml
USP112	Oxalic Acid 0.1N VS	1000	ml
USP114	Perchloric Acid 0.1N in Dioxane VS	1000	ml
USP113	Perchloric Acid 0.1N in Glacial Acetic Acid VS	1000	ml
USP444	Potassium Arsenite 0.1N VS	1000	ml
USP115	Potassium Bromate 0.1N VS	1000	ml
USP116	Potassium Bromide-Bromate 0.1N VS	1000	ml
USP449	Potassium Dichromate 0.025N VS	1000	ml
USP117	Potassium Dichromate 0.1N VS	1000	ml
USP118	Potassium Ferricyanide 0.05M VS	1000	ml
USP504	Potassium Hydroxide 0.1N VS	1000	ml
USP119	Potassium Hydroxide 1N VS	1000	ml
USP121	Potassium Hydroxide Alcoholic 0.1M VS	1000	ml
USP508	Potassium Hydroxide Alcoholic 0.2N VS	1000	ml
USP120	Potassium Hydroxide Alcoholic 0.5N VS	1000	ml
USP122	Potassium Hydroxide Methanolic 0.1N VS	1000	ml
USP123	Potassium Iodate 0.05M VS	1000	ml
USP124	Potassium Permanganate 0.1N VS	1000	ml
USP445	Potassium Thiocyanate 0.1N VS	1000	ml
USP450	Silver Nitrate 0.05N VS	1000	ml
USP125	Silver Nitrate 0.1N VS	1000	ml
USP451	Silver Nitrate in Isopropyl Alcohol 0.002N VS	1000	ml
USP126	Sodium Arsenite 0.05M VS	1000	ml
USP452	Sodium Hydroxide 0.1N VS	1000	ml
USP497	Sodium Hydroxide 0.5N VS	1000	ml
USP127	Sodium Hydroxide 1N VS	1000	ml
USP128	Sodium Hydroxide Alcoholic 0.1N VS	1000	ml

Ref. Number	Description	Volume	Msr
USP129	Sodium Methoxide 0.1N in Toluene VS	1000	ml
USP130	Sodium Methoxide 0.5N in Methanol VS	1000	ml
USP131	Sodium Nitrite 0.1M VS	1000	ml
USP502	Sodium Tetraphenylboron 0.02M VS	1000	ml
USP132	Sodium Thiosulfate 0.1N VS	1000	ml
USP133	Sulfuric Acid 0.5N in Alcohol VS	1000	ml
USP134	Sulfuric Acid 1N VS	1000	ml
USP496	Sulphuric Acid 0.05N VS	1000	ml
USP136	Tetrabutylammonium Hydroxide 0.1N in Methanol/Isopropyl Alcohol VS	1000	ml
USP135	Tetrabutylammonium Hydroxide 0.1N VS	1000	ml
USP137	Tetramethylammonium Bromide 0.1M VS	1000	ml
USP138	Tetramethylammonium Chloride 0.1M VS	1000	ml
USP510	Zinc Sulfate 0.02M VS	1000	ml
USP139	Zinc Sulfate 0.05M VS	1000	ml
USP453	Zinc Sulfate 0.1M VS	1000	ml