



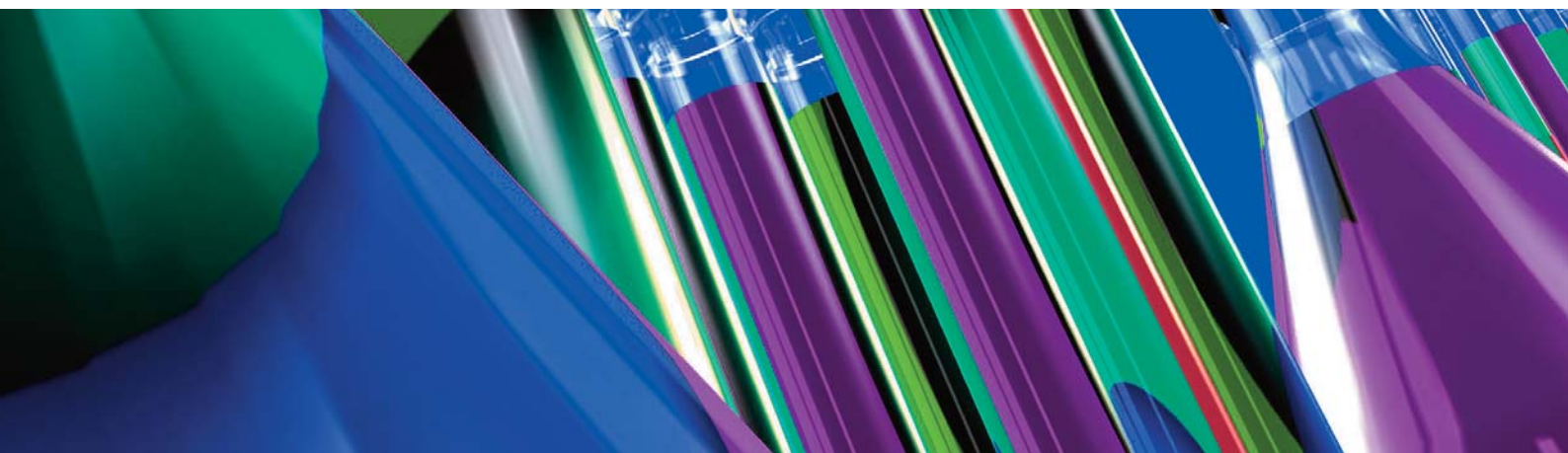
**CPAchem**

**Inorganic Standards and Certified  
Material for AAS, ICP, ICP-MS and IC**

**Organic Pesticides and Metabolites**

**Pharmacopoeia**

**Analytical Reagents and Standards**



CPAchem is a world leader in preparation of custom-made single and multi component calibration standards both inorganic and organic. The four secrets of our success are:

**High-technology, High-experienced staff, High-quality, High-speed.**

We are specialized in the following product lines:

## **Inorganic Standards and Certified Material for AAS, ICP, ICP-MS and IC**

- Single and Multi-elements Standards
- Custom AAS, GFAAS, ICP, ICP-MS and IC Standards
- EPA and ISO methods
- ICP and ICP-MS Internal standards
- AAS and ICP Modifiers, Buffers and Reagents
- Standards equivalent to Merck, Agilent and Perkin Elmer
- IC single and multi ions
- IC Eluent concentrates

## **Organic Pesticides and Metabolites**

- Custom Organic Standards
- ISO Methods
  - Water Quality
  - Soil Quality
- EN Standards
- ASTM Methods
- EPA Methods
- Contaminants Standards
  - Aromatics Hydrocarbons
  - Carbinyls and Carbonyl –DNPH
  - Haloorganic Acids and Esters
  - Hydrocarbons
  - Nitrogen containing compounds
- Pesticides
- Phenols
- Phthalates
- PCBs
- PAHs
- Residual solvents Eur Ph
- Residual solvents <467> USP
- Sulfur in Petroleum
- VOCs
- Single component Solutions

## **Pharmacopoeia**

- European Pharmacopoeia
- U S Pharmacopoeia
- British Pharmacopoeia
- Japanese Pharmacopoeia
- Indian Pharmacopoeia
- International Pharmacopoeia

## Analytical Reagents and Standards

- Custom Analytical Reagents
- Volumetric Solutions
- Conductivity Standards
- pH Buffer Solutions
- Reagents and Standards

We have expanded our range of Pharmacopoeia products adding a lot of new items and now it offers the following products:

- European Pharmacopoeia Products
- USP Reagents – **newly added!**
- Reagents, test solutions and volumetric solutions acc. to British Pharmacopoeia (BP) - newly added!
- Reagents, Test Solutions, etc. acc. to Japanese Pharmacopoeia - newly added!
- Reagents and Solutions acc. to Indian Pharmacopoeia - **newly added!**
- The test solutions and volumetric solutions acc. to International Pharmacopoeia - **newly added!**
- Conductivity Standard Solutions
- pH-buffer Solutions
- Standards of Ethanol in Water
- Analytical Volumetric Solutions (Ready-to-use and Concentrated)
- Karl Fischer Water Standards - **newly added!**

All products are manufactured and tested in compliance with the respective Pharmacopoeia and all are supplied with a Certificate of Analysis.

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We manufacture a number of custom-made products that are not included in this catalogue and we would be pleased to receive such enquiries. Please fill in the form below and send it to us. You can **rely** on receiving a **feedback** within two working days.

## Custom Analytical Reagent

\*Required

Compound*	CAS number or reference *	Concentration*

**CONCENTRATION Units \***

mg/ml       µg/ml       ng/ml       wt./wt%   
 vol./vol%       Molarity       Normality       Other

**GRADE** of chemicals to be used : .....

**PACKAGE SIZE \***

100 ml       500 ml       1 000 ml       other

**NUMBER\* of bottles**

**Annual usage**

Delivery Frequency

**Delivery Quantity**

**Shelf life (if known)**

**Comments/Notes**

**YOUR INFORMATION**

Name\* ..... Title .....

Company \* .....

City\* ..... State/Prov .....

State/Prov .....

Zip/Postal Code\* ..... Country\* .....

Telephone\* ..... Fax ..... E-mail\* .....

Please photocopy, complete the information requested and fax to your local distributor or CPAchem at: +359 42 607 716

# MANAGEMENT'S STATEMENT ON QUALITY POLICY

The major priority of the management of ASPL at "CPA" Ltd is provision of good professional practice and assuring the quality at all stages of Reference Materials production (calibration solutions for ICP, AAS, Ionic chromatography, HPLC, GC as well as pH buffers, conductivity solutions and solutions intended for volumetric analysis), Reagents and Pharmacopoeia products, including:

- Quality of used raw material
- Preparation and control of RM, Reagents and Pharmacopoeia products
- Homogeneity and stability tests
- Calibration/measurement at stated metrological traceability
- Assignment of property values with stated metrological traceability and assigned uncertainty evaluated according to ISO Guide 98-3 and ISO Guide 35
- handling, transportation and storage of RM, Reagents and Pharmacopoeia products
- Customers service.

The Management System developed at ASPL is aimed at increasing the level (quality) of the offered services as well as provision of qualitative and reliable results from calibration/characterization of RM. In order to implement its policy and in accordance with the requirements of EN ISO/IEC 17025, ISO Guide 34, EN ISO 9001:2008, normative regulations and legislation of Republic of Bulgaria the Management has defined the following directions of development:

- Production of RM according to the requirements of ISO Guide 34 and the definitions given by the Guides of ISO REMCO and ISO Guide 99;
- Manufacturing and control of reagents by strictly observing the requirements of the particular Pharmacopoeia
- Strict determination and observance of clients' requirements in order to increase the degree of client's satisfaction;
  - Control of all measurements and calibrations during the process of RM's production in accordance with validation methods, and if required, development of new methods;
- Provision of good professional practice and quality during calibration/characterization of RM
- Certification of CRM according to the requirements of ISO Guide 35 and accompanied with certificates corresponding to the requirements of ISO Guide 31.
- Motivation of the managing and operative company's personnel in order to ensure quality of every single aspect of the activities in relation to production and calibration/characterization of RM, Reagents and Pharmacopoeia products as well as loyal attitude to company's clients
- Continuously improvement in the level of products and services offered as well as development of new ones considering the clients' requirements and market's demand;
- Personnel's training according to the respective activities performed with regard to production of RM, Reagents and Pharmacopoeia products and quality of calibration/characterization;
- Determination of particular, correct and clear interrelations, competences and responsibilities during work performed between the separate sections of ASPL;
- Keeping the MS in accordance with the requirements of EN ISO/IEC 17025, ISO Guide 34 and EN ISO 9001:2008, as well as continuously improvement of its effectiveness through planning and adopting the changes.(modifications)..

The Management of ASPL at the Company declares that neither it nor the ASPL's associates are subject to internal or external financial or other influence that may negatively affect the quality and work's results.

The personnel at ASPL conscientiously performs all activities, strictly observing the confidentiality, independence and application of good laboratory practice principles.

Every member of ASPL's personnel is obliged to be acquainted with the quality documents and to apply strictly the Policy and procedures during his/her work.

MANAGER OF "CPA" Ltd:

(Krassimira Taralova)



# Conductivity Standard Solutions

Produced and calibrated acc. to the instructions given in ISO Guide 34 and ISO 17025

Traceability to SI of NIST (SRM)

Certificate of analysis prepared acc. to ISO Guide 31:2000 „Reference materials - Contents of certificates and labels”.

Description	Validity	Ref	Volume	msr	Price
Conductivity water (nominal 0 - 2 uS/cm) traceable to NIST	6	CS0M0S	250	ml	88
Conductivity Standard 5 uS/cm at 25°C in 30% n-propanol	3	CS5M0S	500	ml	72
Conductivity Standard 10 uS/cm at 25°C in 30% n-propanol	3	CS10M0S	500	ml	72
Conductivity Standard 15 uS/cm at 25°C in 30% n-propanol	3	CS15M0S	500	ml	72
Conductivity Standard 20 uS/cm at 25°C in 30% n-propanol	3	CS20M0S	500	ml	72
Conductivity Standard 25 uS/cm at 25°C in 30% n-propanol	12	CS25M0S	500	ml	72
Conductivity Standard 50 uS/cm at 25°C	6	CS50M0S	500	ml	72
Conductivity Standard 84 uS/cm at 25°C	6	CS84M0S	500	ml	72
Conductivity Standard 100 uS/cm at 25°C	6	CS1P2S	500	ml	72
Conductivity Standard 111.3 mS/cm at 25°C	12	CS111M3MS	500	ml	72
Conductivity Standard 147 uS/cm at 25°C	6	CS147M0S	500	ml	72
Conductivity Standard 200 uS/cm at 25°C	6	CS2P2S	500	ml	72
Conductivity Standard 500 uS/cm at 25°C	12	CS5P2S	500	ml	72
Conductivity Standard 718 uS/cm at 25°C	12	CS718M0S	500	ml	72
Conductivity Standard 1000 uS/cm at 25°C	12	CS1P3S	500	ml	72
Conductivity Standard 1413 uS/cm at 25°C	12	CS1413M0S	500	ml	72
Conductivity Standard 1500 uS/cm at 25°C	12	CS15P2S	500	ml	72
Conductivity Standard 2000 uS/cm at 25°C	12	CS2P3S	500	ml	72
Conductivity Standard 3000 uS/cm at 25°C	12	CS3P3S	500	ml	72
Conductivity Standard 5000 uS/cm at 25°C	12	CS5P3S	500	ml	72
Conductivity Standard 10000 uS/cm at 25°C	12	CS1P4S	500	ml	72
Conductivity Standard 12880 uS/cm at 25°C	12	CS1288P1S	500	ml	72
Conductivity Standard 15000 uS/cm at 25°C	12	CS15P3S	500	ml	72
Conductivity Standard 20000 uS/cm at 25°C	12	CS2P4S	500	ml	72
Conductivity Standard 30000 uS/cm at 25°C	12	CS3P4S	500	ml	72
Conductivity Standard 50000 uS/cm at 25°C	12	CS5P5S	500	ml	72
Conductivity Standard 100000 uS/cm at 25°C	12	CS1P5S	500	ml	83
Conductivity Standard 150000 uS/cm at 25°C	12	CS15P5S	500	ml	83
Conductivity Standard 200000 uS/cm at 25°C	12	CS2P5S	500	ml	83
Conductivity Standard 300000 uS/cm at 25°C	12	CS3P5S	500	ml	83



# pH-buffer Solutions

## Primary pH- buffer Solutions

Produced and calibrated acc. to the instructions given in ISO Guide 34 and ISO 17025

The metrological traceability is assured through calibration by primary method for pH measurement - Harned cell

Expanded Uncertainty – 0.003 ±0.005

Certificate of analysis prepared acc. to ISO Guide 31:2000 „Reference materials - Contents of certificates and labels”.

Description	Validity	Ref	Volume	msr	Price
pH 1.679 at 25 C Potassium Tetraoxalate	12	PH214	500	ml	52
pH 3.557 at 25 C Potassium Hydrogen Tartrate	12	PH223	500	ml	52
pH 3.776 at 25 C Potassium Dihydrogen Citrate	12	PH215	500	ml	52
pH 4.008 at 25 C Potassium Hydrogen Phtalate	12	PH216	500	ml	52
pH 6.865 at 25 C Potassium Dihydrogen Phosphate/ Hydrogen Phosphate	12	PH217	500	ml	52
pH 7.413 at 25 C Potassium Dihydrogen Phosphate/ di-Sodium Hydrogen Phosphate	12	PH218	500	ml	52
pH 9.180 at 25 C Sodium Tetraborate	12	PH219	500	ml	52
pH 10.01 at 25 C Sodium Carbonate/Sodium Hydrogen Carbonate	12	PH220	500	ml	52

## Secondary pH- buffer Solutions

Produced and calibrated acc. to the instructions given in ISO Guide 34 and ISO 17025

Traceability to SI of NIST (SRM) or of accredited according to ISO/ IEC 17025 and/ or ISO Guide 34 Laboratories/ Producers

Certificate of analysis prepared acc. to ISO Guide 31:2000 „Reference materials - Contents of certificates and labels”.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
pH 1.679 at 25 C Potassium Tetraoxalate	12	PH014	500	ml	23	PH014a	1000	ml	33
pH 3.557 at 25 C Potassium Hydrogen Tartrate	12	PH023	500	ml	23	PH021a	1000	ml	33
pH 3.776 at 25 C Potassium Dihydrogen Citrate	12	PH015	500	ml	23	PH015a	1000	ml	33
pH 4.008 at 25 C Potassium Hydrogen Phtalate	12	PH016	500	ml	23	PH016a	1000	ml	33
pH 6.865 at 25 C Potassium Dihydrogen Phosphate/ Hydrogen Phosphate	12	PH017	500	ml	23	PH017a	1000	ml	33
H 7.413 at 25 C Potassium Dihydrogen Phosphate/ di-Sodium Hydrogen Phosphate	12	PH018	500	ml	23	PH018a	1000	ml	33
pH 9.180 at 25 C Sodium Tetraborate	12	PH019	500	ml	23	PH019a	1000	ml	33
pH 10.01 at 25 C Sodium Carbonate/ Sodium Hydrogen Carbonate	12	PH020	500	ml	23	PH020a	1000	ml	33

# Colour Coded pH-buffer Solutions

These pH-buffers are colour coded for simplicity.

Produced and calibrated acc. to the instructions given in ISO Guide 34 and ISO 17025

Traceability to SI of NIST (SRM) or of accredited according to ISO/ IEC 17025 and/ or ISO Guide 34 Laboratories/ Producers

Certificate of analysis prepared acc. to ISO Guide 31:2000 „Reference materials - Contents of certificates and labels”.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
pH 4.00 at 20 C coloured Citric acid/ Sodium Hydroxide/ Sodium Chloride	24	PH004	500 ml	20	PH004a	1000 ml	28		
pH 7.00 at 20 C coloured Potassium Dihydrogen Phosphate/di- Sodium Hydrogen Phosphate	24	PH007	500 ml	20	PH005a	1000 ml	28		
pH 10.00 at 20 C coloured Borax/Sodium Hydroxide	24	PH010	500 ml	20	PH006a	1000 ml	28		

## Reference pH- buffer Solutions

Produced and calibrated acc. to the instructions given in ISO Guide 34 and ISO 17025

Traceability to SI of NIST (SRM) or of Laboratories/ Producers accredited according to ISO/ IEC 17025 and/ or ISO Guide 34

Certificate of analysis prepared acc. to ISO Guide 31:2000 „Reference materials - Contents of certificates and labels”.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
pH 1.00 at 20 C Glycine/ Sodium Chloride/ Hydrochloric Acid	12	PH101	500 ml	25	PH101a	1000 ml	33		
pH 2.00 at 20 C Citric Acid/ Sodium Chloride/ Hydrochloric Acid	12	PH102	500 ml	25	PH102a	1000 ml	33		
pH 3.00 at 20 C Citric Acid/ Sodium Chloride/ Hydrochloric Acid	12	PH103	500 ml	25	PH103a	1000 ml	33		
pH 4.00 at 20 C Citric Acid/ Sodium Chloride/ Sodium Hydroxide	12	PH104	500 ml	25	PH104a	1000 ml	33		
pH 5.00 at 20 C Citric Acid/ Sodium Hydroxide	12	PH105	500 ml	25	PH105a	1000 ml	33		
pH 6.00 at 20 C Citric Acid/ Sodium Hydroxide	12	PH106	500 ml	25	PH106a	1000 ml	33		
pH 7.00 at 20 C di-Sodium Hydrogen Phosphate/ Potassium Dihydrogen Phosphate	12	PH107	500 ml	25	PH107a	1000 ml	33		
pH 8.00 at 20 C Boric Acid/ Sodium Chloride/ Sodium Hydroxide	12	PH108	500 ml	25	PH108a	1000 ml	33		
pH 9.00 at 20 C Boric Acid/ Potassium Chloride/ Sodium Hydroxide	12	PH109	500 ml	25	PH109a	1000 ml	33		
pH 10.00 at 20 C Boric Acide/ Potassium Chloride/	12	PH110	500 ml	25	PH110a	1000 ml	33		

## Sodium Hydroxide

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
pH 11.00 at 20 C Boric Acide/ Potassium Chloride/ Sodium Hydroxide	12	PH111	500	ml	25	PH111a	1000	ml	33
pH 12.00 at 20 C di-Sodium Hydrogen Phosphate/ Sodium Hydroxide	12	PH112	500	ml	25	PH112a	1000	ml	33
pH 13.00 at 20 C Glycine/ Sodium Hydroxide/ Sodium Chloride	12	PH113	500	ml	25	PH113a	1000	ml	33

## Standards of Ethanol in Water

These standards are intended for use as reference solutions for alcohol content measuring instruments.

They are prepared using organic-free water, and the certified concentrations are based on results obtained by density determination.

Accuracy is  $\pm 0.02\%$

Description	Validity	Ref	Volume	msr	Price
Ethanol 20% (v/v)	12	Z03644114	100	ml	18
Ethanol 30% (v/v)	12	Z03644115	500	ml	47
Ethanol 60% (v/v)	12	Z03644116	1000	ml	72
Ethanol 70% (v/v)	12	Z03644117	1000	ml	72
Ethanol 80% (v/v)	12	Z03644118	500	ml	39
Ethanol 90% (v/v)	12	Z03644119	500	ml	39
Kit of ethanolic solutions 9%; 11.50%; 14%	12	KET1	3x100	ml	33
Kit of ethanolic solutions 5%, 9%; 11.50%; 14%	12	KET1a	4x100	ml	55
Kit of ethanolic solutions 35%, 40%; 45%	12	KET2	3x100	ml	36
Kit of ethanolic solutions 50%, 60%; 70%, 80%	12	KET3	3x100	ml	58
Standard Wine Material	12	KET7	250	ml	18

# Analytical Volumetric Solutions

Titration is the oldest but still the most precise procedure in chemical analysis. However, such reliable analyses require accurately adjusted volumetric solutions.

Produced and calibrated acc. to the instructions given in ISO Guide 34 and ISO 17025

Traceability to SI of NIST (SRM) or of Laboratories/ Producers accredited according to ISO/ IEC 17025 and/ or ISO Guide 34

Certificate of analysis prepared acc. to ISO Guide 31:2000 „Reference materials - Contents of certificates and labels”.

Description	Validity	Ref	Volume	msr	Price
Acetic Acid 0.1M (0.1N)	24	Z10141000	1000	ml	22
Acetic Acid 1M (1N)	12	Z10144028	1000	ml	24
Acetic Acid 2M (2N)	24	Z10141001	1000	ml	28
Ammonia (Ammonium Hydroxide) 0.1M (0.1N)	24	Z12271002	1000	ml	23
Ammonium iron(III) sulphate 0.1M	12	Z12181003	1000	ml	31
Ammonium Sulphate 0.5M (1N)	24	Z12341004	1000	ml	31
Ammonium Thiocyanate 0.1M (0.1N)	12	Z12351005	1000	ml	20
Ammonium Thiocyanate 1M (1N)	24	Z12351006	1000	ml	22
Barium Chloride 0.05M (0.1N)	24	Z12461007	1000	ml	20
Benzethonium chloride 0.004M (0.004N)	24	Z12491009	1000	ml	30
Benzethonium chloride 0.04M (0.04N)	24	Z12491010	1000	ml	42
Bromine - Bromate/Bromide 0.05M (0.1N)	24	Z16001011	1000	ml	24
Calcium Chloride 0.005M (0.01N)	24	Z12721012	1000	ml	20
Calcium Chloride 0.01M (0.02N)	24	Z12721013	1000	ml	20
Calcium Chloride 0.02M (0.04N)	24	Z12721014	1000	ml	22
Calcium Chloride 0.1M (0.2N)	12	Z12724226	1000	ml	24
Calcium Chloride 0.5M (1N)	24	Z12721015	1000	ml	24
Cerium (IV) Sulphate 0.05M (0.05N)	24	Z12801016	1000	ml	42
Cerium (IV) Sulphate 0.1M (0.1N)	24	Z12801017	1000	ml	57
Copper (II) Sulphate 0.1M (0.1N)	24	Z13071018	1000	ml	24
EDTA (disodium salt) 0.005M (0.01N)	24	Z10311018	1000	ml	22
EDTA (disodium salt) 0.01M (0.02N)	24	Z10311019	1000	ml	22
EDTA (disodium salt) 0.1M (0.2N)	24	Z10311020	1000	ml	22
EDTA 0.050M (0.100N)	24	Z10311214	1000	ml	28
Hydrochloric Acid 10M (10N)	24	Z13411031	1000	ml	31
Hydrochloric Acid 2M (2N)	24	Z13411028	1000	ml	20
Hydrochloric Acid 5M (5N)	24	Z13411029	1000	ml	20
Hydrochloric Acid 6M (6N)	24	Z13411030	1000	ml	24
Hydrochloric Acid 0.01 M (0.01N)	12	Z13411228	1000	ml	20

Hydrochloric Acid 0.02M (0.02N)	12	Z13414031	1000	ml	20
Hydrochloric Acid 0.05M (0.05N)	24	Z13411022	1000	ml	20
Hydrochloric Acid 0.1M (0.1N)	24	Z13411023	1000	ml	20
Hydrochloric Acid 0.25M (0.25N)	24	Z13411024	1000	ml	20
Hydrochloric Acid 0.2M (0.2N)	24	Z13411025	1000	ml	20
Hydrochloric Acid 0.5M (0.5N)	24	Z13411026	1000	ml	20
Hydrochloric Acid 1M (1N)	24	Z13411027	1000	ml	20
Hydrofluoric acid 1N (1M)	12	Z13214185	1000	ml	22
Iodide-Iodate 0.00333M (0.02N)	12	Z16011031	1000	ml	29
Iodide-Iodate 0.05M (0.3N)	24	Z16011032	1000	ml	29
Iodine 0.01M (0.02N)	12	Z13504057	1000	ml	32
Iodine 0.005M (0.01N)	12	Z13504058	1000	ml	32
Iodine 0.05M (0.1N)	12	Z13501034	1000	ml	33
Iodine 0.1M (0.2 N)	12	Z13504166	1000	ml	43
Iodine 0.5M (1N)	12	Z13501035	1000	ml	81
Iron (II) Sulphate 0.1M	12	Z13591036	1000	ml	30
Lead (II) Nitrate 0.01M (0.02N)	24	Z13711037	1000	ml	26
Lead (II) Nitrate 0.5M (1N)	24	Z13711038	1000	ml	69
Magnesium Chloride 0.01M (0.02N)	24	Z13851039	1000	ml	28
Magnesium Chloride 1M (2N)	24	Z13854102	1000	ml	31
Magnesium Sulphate 0.1M (0.1N)	12	Z13871216	1000	ml	24
Magnesium Sulphate 1M (1N)	12	Z13874184	1000	ml	26
Mercury (I) (Mercurous) Nitrate 0.1M (0.1N)	12	Z14031040	1000	ml	72
Mercury (II) (Mercuric) Nitrate 0.01M (0.02N)	24	Z14041041	1000	ml	35
Mercury (II) (Mercuric) Nitrate 0.05M (0.1N)	24	Z14041042	1000	ml	41
Nickel (II) chloride 0.5M	12	Z14174160	1000	ml	40
Nitric Acid 0.01M (0.01N)	24	Z14221043	1000	ml	20
Nitric Acid 0.1M (0.1N)	12	Z14224048	1000	ml	20
Nitric Acid 1M (1N)	24	Z14221044	1000	ml	20
Nitric Acid 2M (2N)	24	Z14221045	1000	ml	26
Nitric Acid 4M (4N)	24	Z14221046	1000	ml	40
Nitric Acid 5M (5N)	12	Z14224218	1000	ml	40
Nitric Acid 6M (6N)	12	Z14224167	1000	ml	40
Nitric Acid 8M (8N)	24	Z14221047	1000	ml	40
Oxalic Acid 0.025M (0.05N)	12	Z14291048	1000	ml	26
Oxalic Acid 0.05M (0.1N)	24	Z14291049	1000	ml	26
Oxalic Acid 0.5M (1N)	24	Z14291050	1000	ml	26
Oxalic Acid 0.5N (0.25M)	12	Z14294037	1000	ml	26
Perchloric Acid 0.1M (0.1N) in Water	24	Z14331051	1000	ml	51

Perchloric Acid 1M (1N) in Water	24	Z14331052	1000	ml	69
Potassium Bromate 1/60M (0.01667M) (0.1N)	24	Z14421053	1000	ml	26
Potassium Bromide 0.5M (0.5N)	24	Z14431054	1000	ml	26
Potassium Bromide 1M (1N)	24	Z14431055	1000	ml	26
Potassium Chloride 0.5M (0.5N)	24	Z14461056	1000	ml	26
Potassium Chloride 1M (1N)	24	Z14461057	1000	ml	26
Potassium Chloride KCl 0.001M	24	Z14464162	500	ml	11
Potassium Chloride KCl 0.01M	24	Z14464161	500	ml	11
Potassium Chloride KCl 3 mol/l	12	Z14464098	250	ml	20
Potassium Chromate 1/30M (0.0333M)	24	Z14471058	1000	ml	41
Potassium Dichromate 0.167M (1N)	24	Z14411061	1000	ml	40
Potassium Dichromate 1/24M (0.0417M) (0.25N)	24	Z14411060	1000	ml	20
Potassium Dichromate 1/60M (0.0167M) (0.1N)	24	Z14411059	1000	ml	20
Potassium hydrogen phthalate 0.1M (0.1N)	24	Z14651062	1000	ml	22
Potassium Hydroxide 0.05M (0.05N)	24	Z14571063	1000	ml	20
Potassium Hydroxide 0.1M (0.1N)	24	Z14571065	1000	ml	20
Potassium Hydroxide 0.1M (0.1N) in ethanol	12	Z14571064	1000	ml	40
Potassium Hydroxide 0.5M (0.5N)	24	Z14571066	1000	ml	20
Potassium Hydroxide 0.5M (0.5N) in ethanol	12	Z14571070	1000	ml	41
Potassium Hydroxide 1M (1N)	24	Z14571069	1000	ml	20
Potassium Hydroxide 1M (1N) in methanol	12	Z14571068	1000	ml	41
Potassium Iodate 0.0147M (0.08833N)	24	Z14581070	1000	ml	22
Potassium Iodate 0.01667M (0.1N)	24	Z14581071	1000	ml	22
Potassium Iodate 0.05M (0.3N)	24	Z14581072	1000	ml	22
Potassium Iodide 0.1M (0.1N)	24	Z14591073	1000	ml	24
Potassium Iodide 1M (1N)	24	Z14591074	1000	ml	59
Potassium Iodide 3M (3N)	24	Z14591075	1000	ml	146
Potassium nitrate 1M	12	Z14624145	1000	ml	24
Potassium Permanganate 0.01M (0.05N)	24	Z14641076	1000	ml	26
Potassium Permanganate 0.02M (0.1N)	24	Z14641077	1000	ml	26
Potassium Permanganate 0.05M (0.25N)	24	Z14641078	1000	ml	26
Potassium Permanganate 0.2M (1N)	24	Z14641079	1000	ml	29
Potassium Thiocyanate 0.1M (0.1N)	24	Z16031080	1000	ml	22
Silver Nitrate 0.01M (0.01N)	24	Z14941081	1000	ml	37
Silver Nitrate 0.05M (0.05N)	24	Z14941082	1000	ml	37
Silver Nitrate 0.1M (0.1N)	24	Z14941083	1000	ml	66
Silver Nitrate 1M (1N)	24	Z14941085	1000	ml	290
Sodium Carbonate 0.05M (0.1N)	12	Z15031089	1000	ml	20
Sodium Carbonate 0.5M (1N)	12	Z15031090	1000	ml	20

Sodium Chloride 0.01M (0.01N)	12	Z15084083	1000	ml	20
Sodium Chloride 0.05M (0.05N)	24	Z15081091	1000	ml	20
Sodium Chloride 0.1M (0.1N)	24	Z15081092	1000	ml	20
Sodium Chloride 1M (1N)	24	Z15081093	1000	ml	20
Sodium Hydroxide 0.01M (0.01N)	12	Z15171207	1000	ml	13
Sodium Hydroxide 0.02M (0.02N)	24	Z15171094	1000	ml	20
Sodium Hydroxide 0.1M (0.1N)	24	Z15171095	1000	ml	20
Sodium Hydroxide 0.5M (0.5N)	24	Z15171098	1000	ml	20
Sodium Hydroxide 1M (1N)	24	Z15171099	1000	ml	20
Sodium Hydroxide 2M (2N)	24	Z15171100	1000	ml	20
Sodium Hydroxide 4M (4N)	24	Z15171101	1000	ml	20
Sodium Nitrite 0.1M (0.2N)	12	Z15231102	1000	ml	20
Sodium Nitrite 0.5M (1N)	12	Z15231104	1000	ml	20
Sodium Nitrite 1M (2N)	12	Z15231105	1000	ml	20
Sodium Oxalate 0.05M (0.1N)	24	Z15241107	1000	ml	24
Sodium Thiocyanate 0.1M (0.1N)	24	Z16041108	1000	ml	26
Sodium Thiosulphate 0.01M (0.01N)	24	Z15321109	1000	ml	17
Sodium Thiosulphate 0.05M (0.05N)	24	Z15321110	1000	ml	20
Sodium Thiosulphate 0.1M (0.1N)	24	Z15321111	1000	ml	13
Sodium Thiosulphate 0.5M (0.5N)	12	Z15324193	1000	ml	26
Sodium Thiosulphate 1M (1N)	24	Z15321112	1000	ml	20
Sulphuric Acid 0.05M (0.1N)	24	Z15451113	1000	ml	18
Sulphuric Acid 0.1M (0.2N)	24	Z15451114	1000	ml	18
Sulphuric Acid 0.5M (1N)	24	Z15451117	1000	ml	18
Sulphuric Acid 1M (2N)	24	Z15451116	1000	ml	18
Sulphuric Acid 2.5M (5N)	24	Z15451118	1000	ml	24
Sulphuric Acid 5M (10N)	24	Z15451119	1000	ml	24
Zinc Chloride 0.1M (0.1N)	24	Z15871120	1000	ml	24
Zinc Chloride 0.5M (0.5N)	24	Z15871121	1000	ml	34
Zinc Sulphate 0.01M (0.01N)	12	Z107304181	1000	ml	24
Zinc Sulphate 0.02 M (0.02 N)	12	Z16051124	1000	ml	22
Zinc Sulphate 0.05M (0.05N)	24	Z16051122	1000	ml	22
Zinc Sulphate 0.1M (0.1N)	24	Z16051123	1000	ml	22



# Concentrated Volumetric Solutions

Volumetric concentrates offer the convenience of prepared volumetric solutions with the benefits of reduced shipping costs and storage space. Concentrated are designed to be quantitatively transferred and brought to volume.

Certificate of Analysis with actual contents, lot number, expiry date and traceability to SI of NIST (SRM) or of Laboratories/ Producers accredited according to ISO/ IEC 17025 and/ or ISO Guide 34

Concentrated volumetric solutions in sealed bottles. Easy to use. No ampoules to break. No need for pipetting. Empty the bottle in a volumetric flask, rinse and complete to volume.

Description	Validity	Ref	Volume	msr	Price
EDTA - concentrate to make 1L 0.1M solution	12	CC1031005	100	ml	25
EDTA - concentrate to make 1L 0.01 M solution	12	CC1031006	100	ml	25
EDTA - concentrate to make 1L 0.005 M solution	12	CC1031007	100	ml	25
EDTA - concentrate to make 1L 0.05M solution	12	CC1031008	100	ml	25
Ammonia - concentrate to make 1L 1M solution	12	CC1227002	100	ml	25
Hydrochloric Acid - concentrate to make 1L 1M solution	12	CC1341007	100	ml	20
Hydrochloric Acid - concentrate to make 1L 0.1M (0.1N) solution	12	CC1341010	100	ml	20
Iodine - concentrate to make 1L 0.05M (0.1N) solution	12	CC1350011	100	ml	25
Iodine - concentrate to make 1L 0.025M (0.05 N) solution	12	CC1350012	100	ml	25
Iodine - concentrate to make 1L 0.005M (0.01 N) solution	12	CC1350013	100	ml	25
Nitric Acid - concentrate to make 1L 1M (1N) solution	12	CC1422014	100	ml	20
Nitric Acid 0.1 M (0.1N) concentrated solution	12	CC1422015	100	ml	20
Potassium Dichromate - concentrate to make 1L 1/60M (0.1N) solution	12	CC1430011	100	ml	20
Potassium iodate - concentrate to make 1L 1/60M (0.1N) solution	12	CC14581071	100	ml	25
Potassium Permanganate concentrate to make 1L 1/50M (0.1N) KMnO <sub>4</sub>	12	CC1464016	100	ml	25
Silver nitrate - Concentrate to make 1L 0.1M (0.1N) solution	12	CC1494018	100	ml	61
Sodium Hydroxide - concentrate to make 1L 1M (1N) solution	12	CC1517019	100	ml	20
Sodium Hydroxide -concentrate to make 1L 0.1M (0.1N) solution	12	CC1517023	100	ml	20
Sodium Hydroxide - concentrate to make 1L 0.01M (0.01N) solution	12	CC1517022	100	ml	20
Sodium Thiosulphate - concentrate to make 1L 0.1M (0.1N) solution	12	CC1532023	100	ml	20
Sodium Thiosulphate - concentrate to make 1L 0.01M (0.01N) solution	12	CC1532024	100	ml	20
Sulphuric Acide - concentrate to make 1L 0.5M (1N) solution	12	CC1545025	100	ml	20
Sulphuric Acid - concentrate to make 1L 0.1N solution	12	CC1545026	100	ml	20

# Karl Fischer Standards

The Water Determination Test (Karl Fischer Method) is designed to determine water content in substances by volumetric or coulometric determinations. The standards are intended to standardize and control reagents, check the reliability of titrations and test instruments according to the requirements of ISO 9000, GMP, GLP and FDA guidelines.

Certificate of Analysis giving the actual water content.

Description	Validity	Ref	Volume	msr	Price
Karl Fischer coulometric Water Standard 0.01% - 10 ampoules x 4g (1 g contains 0.10 mg H <sub>2</sub> O)	36	KF001PGME	4x10	g	44
Karl Fischer coulometric Water Standard 0.1% - 10 ampoules x 4g (1 g contains 0.10 mg H <sub>2</sub> O)	36	KF01PGME	4x10	g	44
Karl Fischer coulometric Water Standard 1% - 10 ampoules x 4g (1 g contains 0.10 mg H <sub>2</sub> O)	36	KF1PGME	4x10	ml	44
Karl Fischer volumetric Fixed Water Standard - Sodium Tartrate Dihydrate (contains 15.66 +/- 0.05% H <sub>2</sub> O)	36	KFFSTD	100	g	34
Karl Fischer volumetric Fixed Water Standard - Tripotassium Citrate Monohydrate (contains 5.55 +/- 0.05% H <sub>2</sub> O)	12	KFOPC	10	g	28
Karl Fischer volumetric Water Standard - 0.5% (1 ml methanol contains 5 mg H <sub>2</sub> O)	12	KFV05STD	250	ml	33
Karl Fischer volumetric Water Standard - 1% (1 ml methanol contains 10 mg H <sub>2</sub> O)	36	KFV1STD	500	ml	55

## Reagents

Description	Validity	Ref	Volume	msr	Price
Biuret Reagent	12	Z30044227	100	ml	40
Coomassie Staining Solution	12	Z00454232	100	ml	57
Denigès' Reagent	18	Z00454235	100	ml	39
Digoxin Reagent	12	Z00454237	100	ml	55
Dragendorff's reagent (A+B)	6	Z00454233	100+100	ml	66
Fehling's Solution (A+B)	24	Z16061128	500+500	ml	99
Folin and Ciocalteu's phenol reagent	12	Z13794170	100	ml	33
Griess - Illosvay's Reagent	6	Z16071130	100	ml	23
Griess-Romijn's nitric acid reagent	12	Z00454238	30	ml	66
Griess-Romijn's nitrous acid reagent	12	Z00454239	100	ml	66
Mayer's Reagent	12	Z30044230	100	ml	39
Molybdovanadic reagent	12	Z30044231	100	ml	26
Nessler's Reagent A	12	Z16081131	500	ml	33
Nessler's Reagent B	12	Z16081131	500	ml	33
Schiff's fuchsin-sulfite reagent	12	Z30044229	100	ml	26
Schiff's reagent	12	Z30044228	100	ml	26
Schweitzer's Reagent	12	Z00454236	100	ml	77
Valser's Reagent	6	Z00454234	100	ml	72

# European Pharmacopoeia Products

## Opalescence and Coloration Solutions

These solutions are specially intended for use in testing Ph Eur and monographs. These solutions are produced according to 2.02.01 - Clarity and degree of opalescence of liquids and 2.02.02 - Degree of coloration of liquids of Ph Eur requirements using Ph Eur reagent quality components and water meeting the Ph Eur monograph requirements for Purified water. Each bottle is accompanied by a Certificate of Analysis.

### Clarity and degree of opalescence of liquids

Description	Validity	Ref	Volume	msr	Price
Primary opalescent suspension	6	OP001	100	ml	58
Hydrazine sulfate solution	6	OP002	100	ml	36
Hexamethylenetetramine solution	6	OP003	100	ml	36

### Degree of coloration of liquids

Description	Validity	Ref	Volume	msr	Price
Primary blue solution	24	CB004	100	ml	58
Primary red solution	24	CR003	100	ml	87
Primary Yellow solution	24	CY002	100	ml	58
Standard solution B (brown)	6	B005	125	ml	87
Standard solution BY (brownish yellow)	6	BY006	125	ml	74
Standard solution GY (greenish yellow)	12	GY008	125	ml	74
Standard solution R (red)	6	R009	125	ml	87
Standard solution Y (yellow)	6	Y007	125	ml	74
Colour Reference Solutions B: B1-B9	12	B105	9x100	ml	215
Colour Reference Solutions BY: BY1-BY7	12	BY106	7x100	ml	215
Colour Reference Solutions GY: GY1-GY7	6	GY108	7x100	ml	215
Colour Reference Solutions R: R1-R7	12	R109	7x100	ml	215
Colour Reference Solutions Y: Y1-Y7	12	Y107	7x100	ml	215
Hydrochloric Acid (Dilution Matrix)	24	DM015	1000	ml	58

## Solutions for Absorbance Spectrophotometry, Ultraviolet and Visible

Prepared acc. to 2.02.25 and provided to control spectrophotometers

Description	Validity	Ref	Price
Refractive Index Standard Kit : 5x8 ml Isooctane and 5x8 ml Water	24	RIIOW	103
Refractive Index Standard Kit : 5x8 ml Toluene and 5x8 ml Water	24	RITW	103
Potassium Chloride Solution for Stray Light Limit: 3x10 ml	36	UV2225KCl	107
Sodium Iodide Solution for Stray Light Testing: 3 x 10 ml	12	UV2225KNaI	107
Sodium Nitrite Solution for Stray Light Testing: 3 x 10 ml	12	UV2225KNaNi	107
Set of 2x10 ml Potassium Dichromate Solution for Absorbance Control 235 - 350 nm and 6x10 ml blank	36	UV2225PDA	107
Set of 2x10 ml Potassium Dichromate Solution for Absorbance Control at 430 nm and 6x10 ml blank	36	UV2225PDB	107
Set of 2x10 ml Toluene/ Hexane Solution for Resolution (for qualitative analysis) and 6x10 ml Blank	36	UV2225R	158
Holmium Oxide Solution for Wavelengths Control	36	UV2225WL	167

# European Pharmacopoeia:

- Reagents
- Standard Solutions
- Buffer Solutions

These solutions are produced according to the specifications given in chapter 4.1 using Ph Eur reagent quality components and water R meeting the Ph Eur monograph requirements for Purified water. Reagent solutions used in the limit tests for barium, calcium and sulfates are prepared using distilled water R.

Some of the reagents included in the list are toxic and should be handled in conformity with good quality control laboratory practice.

Each bottle is accompanied by a Certificate of Analysis.

The identity of C.P.A. Products Codes with Ph Eur Codes (seven-figure reference code which will remain unchanged for a given reagent during subsequent revisions) makes the desired product easy to find.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetic acid	24	1000401	1000	ml	37	1000401a	100	ml	24
Acetic acid, dilute	24	1000402	1000	ml	39				
Acetic anhydride solution R1	12	1000501	1000	ml	317	1000501a	100	ml	86
Acetylacetone reagent R1	12	1000901	100	ml	50				
Alcohol, aldehyde - free	12	1002501	1000	ml	142				
Alizarin S solution	12	1002601	100	ml	43				
Aluminium chloride reagent	12	1002702	1000	ml	103	1002702a	100	ml	39
Aluminium chloride solution	12	1002701	100	ml	72				
Amido black 10B solution	12	1003101	100	ml	40				
4-Aminobenzoic Acid Solution - Solution A	12	1003301	100	ml	114				
Aminohippuric acid reagent	12	1003701	100	ml	43				
Aminomethylalizarindiacetic Acid Reagent (Sol A+B+C)	3	1003901	50+50+100	ml	222				
Aminomethylalizarindiacetic Acid Solution	3	1003902	1000	ml	106				
Aminopyrazolone solution	12	1004601	100	ml	32				
Ammonia	12	1004701	1000	ml	40				
Ammonia, dilute R1	12	1004702	1000	ml	40				
Ammonia, dilute R2	12	1004703	1000	ml	92				
Ammonia, dilute R3	12	1004704	1000	ml	40				
Ammonia, dilute R4	12	1004706	1000	ml	40				
Ammonium carbonate solution	24	1005201	1000	ml	142				
Ammonium carbonate solution R1	12	1005202	100	ml	40				
Ammonium chloride solution	24	1005301	1000	ml	70				
Ammonium molybdate solution	12	1005702	1000	ml	76				

Ammonium molybdate solution R2	12	1005703	1000 ml	76	1005703a	50 ml	38
Ammonium molybdate solution R3 (I+II)	12	1005704	200+800 ml	118			
Ammonium Molybdate Solution R6	12	1005709	100 ml	42			
Ammonium oxalate solution	24	1005901	1000 ml	85			
Ammonium Thiocyanate	24	1006701	1000 ml	77			
Ammonium vanadate solution	12	1006801	100 ml	48			
Anisaldehyde solution	12	1007301	100 ml	48			
Anisaldehyde solution R1	12	1007302	100 ml	35			
Antimony trichloride solution	12	1007701	100 ml	97			
Antimony Trichloride Solution R1 (Solution A)	6	1007702	100 ml	149			
Arsenite solution	12	1008301	100 ml	35			
Ascorbic acid solution	12	1008401	100 ml	45			
Azomethine H solution	12	1008701	100 ml	45			
Barium chloride solution R1	24	1009301	1000 ml	81			
Barium chloride solution R2	24	1009302	1000 ml	81			
Barium hydroxide solution	24	1009401	1000 ml	75			
Bismuth subnitrate solution	24	1011502	500 ml	79			
Biuret reagent	12	1011601	1000 ml	52			
Blocking Solution	24	1122400	1000 ml	35			
Borate solution	24	1033601	1000 ml	59			
Boric acid solution, saturated, cold	12	1011801	100 ml	57			
Bromine solution	12	1012401	100 ml	46			
Bromine water	3	1012402	100 ml	40			
Bromocresol green- methyl red solution	12	1012602	100 ml	29			
Bromocresol green solution	24	1012601	100 ml	29			
Bromocresol purple solution	24	1012701	100 ml	29			
Bromophenol blue solution	24	1012801	100 ml	29			
Bromophenol blue solution R1	24	1012802	100 ml	29			
Bromophenol blue solution R2	24	1012803	100 ml	29			
Bromothymol blue solution R1	24	1012901	100 ml	29			
Bromothymol blue solution R2	24	1012902	100 ml	46			
Bromothymol blue solution R3	24	1012903	100 ml	43			
Bromothymol blue solution R4	24	1012904	100 ml	43			
BRP indicator solution	12	1013000	100 ml	29			
Calcium chloride solution	24	1014601	1000 ml	94			
Calcium chloride solution 0.01M	24	1014602	1000 ml	51	1014602a	100 ml	35
Calcium chloride solution 0.025M	24	1014604	1000 ml	51			
Calcium Sulfate solution	12	1015201	100 ml	48			
Calconecarboxylic acid triturate	12	1015301	50 g	69			

Chloral hydrate solution	12	1017901	100 ml	64			
2-Chloroethanol solution	12	1097501	50 ml	57			
2-Chloroethanol solution	12	1097501a	10 ml	43			
Chloroform, acidified	12	1018601	100 ml	43			
Chromotrope IIB Solution	12	1020201	100 ml	50			
Chromotropic Acid-Sulphuric Acid Solution	6	1020302	100 ml	43			
Congo red paper	12	1022002	pack of 50	134			
Congo red solution	24	1022001	100 ml	29			
Coomassie Staining Solution	12	1012201	100 ml	57			
Coomassie Staining Solution R1	12	1173000	100 ml	57			
Copper edetate solution	12	1022300	1000 ml	84	1022300a	100 ml	40
Copper sulfate solution	24	1022501	1000 ml	75			
Copper tetrammine, ammoniacal solution of	12	1022600	100 ml	62			
Cresol red solution	24	1022801	100 ml	29			
Crystal violet solution	12	1022901	100 ml	29			
Cupri-citric solution	12	1023100	1000 ml	86			
Cupri-citric solution R1	12	1023200	1000 ml	127			
Cupri-tartaric solution (I+II)	12	1023300	500+500 ml	127			
Cupri-tartaric solution R4 (I+II)	12	1023304	500+500 ml	127			
Decolorised pararosaniline solution	6	1062201	100 ml	77			
Destaining solution	24	1012202	1000 ml	69			
Developer solution	12	1122500	500 ml	66			
Dichloroacetic acid solution	12	1027001	500 ml	81			
Dimethylaminobenzaldehyde solution R6	3	1029803	100 ml	128			
Dimidium bromide-sulphan blue mixed solution	12	1031101	500 ml	175			
Dinitrobenzene solution	12	1031201	1000 ml	128			
Dinitrobenzoic acid solution	12	1031301	1000 ml	175			
Dioxan solution	12	1032002	100 ml	112			
Dioxan solution R1	12	1032003	50 ml	72			
Dioxan stock solution	12	1032001	100 ml	116			
Diphenylamine solution	12	1032101	1000 ml	37			
Diphenylamine solution R1	12	1032102	1000 ml	72			
Diphenylcarbazone mercuric reagent (I+II)	12	1032601	100+100 ml	59			
Disodium hydrogen phosphate solution	24	1033301	1000 ml	59			
Dithizone solution R2	12	1033903	100 ml	128			
Divanadium pentoxide solution in sulphuric acid	24	1034001	100 ml	97			
Ethyl acetate, treated	3	1035301	1000 ml	259			
Ethylene oxide solution R5	12	1036408	10 ml	97			
Ethylene oxide stock solution	12	1036401	10 ml	132			



Ethylene oxide stock solution R1	12	1036406	10 ml	97
Ferric ammonium sulphate R2	12	1037702	1000 ml	59
Ferric ammonium sulphate R5	12	1037704	100 ml	47
Ferric ammonium sulphate R6	12	1037705	100 ml	59
Ferric chloride solution R1	12	1037801	1000 ml	68
Ferric chloride solution R2	12	1037802	1000 ml	64
Ferric chloride solution R3	12	1037803	100 ml	57
Ferric chloride-sulphamic acid reagent	12	1037804	1000 ml	68
Ferroun	24	1038100	100 ml	46
Fixing solution	6	1122600	500 ml	58
Fixing solution for isoelectric focusing in polyacrylamide gel	6	1138700	500 ml	81
Formaldehyde solution	12	1039101	100 ml	32
Formamide, treated	6	1039201	100 ml	59
Fuchsin solution, decolorised	12	1039401	100 ml	26
Fuchsin solution, decolorised R1	12	1039402	100 ml	26
Holmium perchlorate solution	12	1043101	3x10 ml	167
Hydrochloric acid, brominated	12	1043507	100 ml	62
Hydrochloric acid, dilute	24	1043503	1000 ml	54
Hydrochloric acid, dilute R1	24	1043504	1000 ml	56
Hydrochloric acid, dilute R2	24	1043505	1000 ml	56
Hydrochloric acid, ethanolic	24	1043506	1000 ml	117
Hydrochloric Acid, Methanolic	24	1043511	1000 ml	90
Hydrochloric acid, R1	24	1043501	1000 ml	56
Hydroquinone solution	6	1044101	100 ml	53
Hydroxylamine hydrochloride solution R2	12	1044304	100 ml	86
Hydroxylamine solution, alcoholic	12	1044301	100 ml	73
Hydroxylamine solution, alkaline (I+II)	6	1044302	500+500 ml	146
Hydroxylamine solution, alkaline R1 (I+II)	12	1044303	100+100 ml	81
Hypophosphorous reagent	6	1045200	100 ml	105
Indigo carmine solution	12	1045601	100 ml	29
Indigo carmine solution R1	12	1045602	1000 ml	86
Iodine bromide solution	12	1045901	1000 ml	176
Iodine Chloride Solution	12	1143001	100 ml	45
Iodine solution R4	12	1045806	1000 ml	86
Iodine solution, alcoholic	12	1045804	1000 ml	149
Iodine solution, chloroformic	12	1045805	1000 ml	149
Iodoplatinate reagent	12	1046300	200 ml	147
Iron salicylate solution	6	1046700	500 ml	150
Isatin Reagent	6	1046801	100 ml	52

## Karl Fischer coulometric Water Standard 0.01% -

10 ampoules x 4g (1 g contains 0.10 mg H <sub>2</sub> O)	36	1147300-1	4x10	g	44
Lanthanum chloride solution	24	1114001	1000	ml	297
Lanthanum nitrate solution	24	1048001	1000	ml	312
Lead acetate cotton	12	1048101	10	g	88
Lead acetate paper	12	1048102	pack of 50		134
Lead acetate solution	6	1048103	1000	ml	61
Lead nitrate solution	12	1048301	1000	ml	51
Lead subacetate solution	12	1048400	100	ml	44
Litmus paper, blue	12	1049301	pack of 50		134
Litmus paper, red	12	1049302	pack of 50		134
Magnesium nitrate solution	12	1049801	100	ml	51
Magnesium nitrate solution R1 (10 times concentrated)	12	1049802	100	ml	43
Malachite green solution	6	1050501	100	ml	37
m-Cresol purple solution	12	1121701	100	ml	29
Mercuric acetate solution	6	1052001	100	ml	51
Mercuric bromide paper	12	1052101	pack of 50		134
Mercuric chloride solution	12	1052201	100	ml	29
Mercuric sulphate solution	12	1052600	100	ml	29
Mercury, nitric acid solution of	6	1052801	100	ml	29
Metanil Yellow Solution	12	1052901	100	ml	29
Methanol, Aldehyde-free	24	1053300	1000	ml	80
Methanol, Anhydrous	24	1053400	1000	ml	80
Methanol, hydrochloric	24	1053203	100	ml	29
Methoxyphenylacetic Acid Reagent	12	1053601	30	ml	317
Methyl 4-acetylbenzoate reagent	6	1154100	100	ml	86
Methyl orange mixed solution	12	1054801	100	ml	29
Methyl orange solution	24	1054802	100	ml	29
Methyl red mixed solution	12	1055101	100	ml	29
Methyl red solution	24	1055102	100	ml	29
Methylene chloride, acidified	12	1055901	100	ml	29
Methylthymol blue mixture	24	1158501	50	g	77
Molybdovanadic reagent	12	1056700	100	ml	29
Mordant black 11 triturate	24	1056801	100	g	29
Mordant black 11 triturate R1	24	1056802	100	g	35
Naphtholbenzein solution	24	1057601	100	ml	38
Nile blue A solution	12	1058201	100	ml	45
Ninhydrin and stannous chloride reagent R1 (A +B)	3	1058302	100+100	ml	66
Ninhydrin solution	12	1058303	100	ml	35

Ninhydrin solution R1	12	1058304	100 ml	35			
Ninhydrin solution R2	12	1058305	100 ml	42			
Ninhydrin solution R3	12	1058306	100 ml	46			
Ninhydrin solution R3	12	1058306	100 ml	46			
Nitric acid, dilute	24	1058402	100 ml	25			
Nitric acid, dilute R1	24	1058407	100 ml	25			
Nitric acid, dilute R2	24	1058409	100 ml	25			
Nitrochromic reagent	24	1059100	100 ml	54			
Nitro-molybdovanadic reagent	12	1060100	500 ml	72			
Oxalic acid and sulphuric acid solution	12	1061401	1000 ml	92			
Palladium chloride solution (to be diluted)	24	1061501	100 ml	193			
Perchloric acid solution	24	1062901	100 ml	29			
Periodic acetic acid solution	12	1063000	100 ml	80			
Phenol red solution	24	1063601	100 ml	29			
Phenol red solution R2	24	1063603	500 ml	52	1063603a	100 ml	29
Phenol red solution R3	24	1063604	500 ml	52	1063604a	100 ml	29
Phenolphthalein paper	24	1063704	pack of 50	134			
Phenolphthalein solution	24	1063702	100 ml	29			
Phenolphthalein solution R1	24	1063703	100 ml	29			
Phenylhydrazine hydrochloride solution	6	1064501	100 ml	36			
Phosphomolybdotungstic reagent	12	1065000	100 ml	101			
Phosphomolybdotungstic reagent, dilute	12	1065001	100 ml	55			
Phosphoric acid, dilute	12	1065101	1000 ml	40			
Phosphoric acid, dilute R1	12	1065102	1000 ml	40			
Phosphotungstic acid solution	12	1065200	100 ml	41			
Picric acid solution	6	1065801	100 ml	35			
Picric acid solution R1	6	1065802	100 ml	29			
Potassium chloride 0.1M	24	1069101	1000 ml	53			
Potassium chromate solution	24	1069201	1000 ml	47			
Potassium dichromate solution	12	1069501	1000 ml	106			
Potassium dichromate solution R1	12	1069502	1000 ml	41			
Potassium dihydrogen phosphate, 0.2 M	12	1069601	1000 ml	41			
Potassium ferriperiodate solution	6	1070801	100 ml	64			
Potassium ferrocyanide solution	12	1069801	100 ml	35			
Potassium hydrogen phthalate, 0.2M	6	1070001	1000 ml	58			
Potassium hydroxide in alcohol (10% V/V), 0.5M	12	1070302	1000 ml	47			
Potassium hydroxide solution, alcoholic	12	1070303	100 ml	47			
Potassium hydroxide solution, alcoholic R1	12	1070304	1000 ml	66			
Potassium hydroxide, alcoholic 2M	12	1070301	100 ml	29			

Potassium iodide and starch solution	12	1070501	100 ml	31
Potassium iodide solution	24	1070502	1000 ml	47
Potassium iodide solution, iodinated	12	1070503	100 ml	43
Potassium iodide solution, iodinated R1	12	1070505	100 ml	43
Potassium iodide solution, saturated	12	1070504	100 ml	43
Potassium iodobismuthate solution	6	1070600	100 ml	31
Potassium iodobismuthate solution R1	6	1070601	500 ml	213
Potassium iodobismuthate solution R2 (Stock solution)	6	1070602	100 ml	117
Potassium iodobismuthate solution R3	6	1070604	100 ml	129
Potassium iodobismuthate solution R4	6	1070605	100 ml	129
Potassium iodobismuthate solution R5	6	1070606	100 ml	129
Potassium iodobismuthate solution, dilute	6	1070603	500 ml	113
Potassium permanganate and phosphoric acid solution	12	1070901	100 ml	46
Potassium permanganate solution	24	1070902	1000 ml	57
Potassium plumbite solution	6	1071200	100 ml	51
Potassium pyroantimonate solution	12	1071301	100 ml	37
Potassium tetraiodomercurate solution	12	1071500	100 ml	46
Potassium tetraiodomercurate solution, alkaline (I+II)	24	1071600	100+100 ml	54
Potassium thiocyanate solution	24	1071801	1000 ml	46
Pyridylazonaphthol Solution	12	1073501	100 ml	35
Quinaldine red solution	24	1073801	100 ml	37
Ruthenium red solution	12	1075201	100 ml	84
Salicylaldehyde azine. C <sub>14</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub> . (Mr 240.3)	12	1075500	100 g	162
SDS-PAGE Running Buffer (10 times concentrated)	12	1114900	1000 ml	105
SDS-PAGE Sample Buffer (Concentrated)	12	1115000	125 ml	70
SDS-PAGE Sample Buffer Solution for Reducing Conditions (Concentrated)	12	1122100	500 ml	138
Silver manganese paper	12	1078200	packof 50	134
Silver nitrate reagent	24	1078305	100 ml	92
Silver nitrate solution in pyridine	12	1078304	100 ml	196
Silver nitrate solution R1	24	1078301	1000 ml	107
Silver nitrate solution R2	24	1078302	1000 ml	80
Sodium carbonate solution	24	1079301	1000 ml	48
Sodium carbonate solution R1	24	1079302	1000 ml	48
Sodium carbonate solution R2	24	1079303	1000 ml	48
Sodium chloride solution	24	1079502	1000 ml	43
Sodium chloride solution, saturated	12	1079503	1000 ml	51
Sodium hydrogen carbonate solution	24	1081301	1000 ml	43
Sodium hydroxide solution	24	1081401	1000 ml	54
Sodium hydroxide solution, carbonate - free	24	1081406	1000 ml	77

Sodium hydroxide solution, dilute	24	1081402	1000 ml	39
Sodium hydroxide solution, methanolic	24	1081403	100 ml	54
Sodium hydroxide solution, methanolic R1	24	1081405	100 ml	54
Sodium hydroxide solution, strong	24	1081404	1000 ml	81
Sodium hypochlorite solution, strong	12	1081600	1000 ml	64
Sodium metabisulphite 45.5 g/l solution	12	1058305-2	100 ml	54
Sodium sulphide solution	6	1083901	100 ml	47
Sodium sulphide solution R1	6	1083902	100 ml	80
Standard solution for micro determination of water Karl Fischer coulometric Water Standard 0.1% - 10 ampoules x 4g (1 g contains 1.0 mg H <sub>2</sub> O)	36	1147300-2	10x4 g	44
Standard solution for micro determination of water Karl Fischer coulometric Water Standard 1% - 10 ampoules x 4g (1 g contains 10 mg H <sub>2</sub> O)	36	1147300-3	4x10 g	44
Stannous chloride solution	12	1085001	100 ml	42
Starch iodate paper	12	1085101	packof 50	134
Starch iodide paper	24	1085106	packof 50	52
Starch solution	12	1085103	100 ml	31
Sulphanilic acid solution	3	1086203	100 ml	52
Sulphanilic acid solution R1	3	1086201	100 ml	52
Sulphomolybdic reagent R2	12	1086400	100 ml	52
Sulphomolybdic reagent R3	12	1086500	100 ml	57
Sulphuric acid, dilute	24	1086804	1000 ml	40
Sulphuric acid-formaldehyde reagent	6	1086805	100 ml	46
Tetramethyldiaminodiphenylmethane reagent	6	1088701	100 ml	156
Thioacetamide solution	12	1089602	1000 ml	133
Thymol blue solution	24	1090601	100 ml	29
Thymolphthalein solution	12	1090701	100 ml	29
Titan yellow paper	12	1090901	pack of 50	134
Titan yellow solution	12	1090902	100 ml	29
Titanium trichloride - sulphuric acid reagent	6	1091202	100 ml	42
Titanium trichloride solution	12	1091201	100 ml	47
TLC performance test solution	6	1116600	10 ml	46
o-Tolidine solution	6	1123001	500 ml	57
Trichloroacetic acid solution	12	1092501	1000 ml	61
Triphenyltetrazolium Chloride Solution	12	1093801	100 ml	52
Tris (hydroxymethyl) aminomethane solution	4	1094201	100 ml	57
Vanillin solution, phosphoric	12	1095302	100 ml	54
Water	12	1095500	5000 ml	69

Water for chromatography	12	1095503	1000	ml	44
Water, ammonium-free	12	1095501	1000	ml	42
Water, carbon dioxide - free	12	1095502	1000	ml	42
Water, nitrate-free	12	1095506	1000	ml	42
Water, particle-free	12	1095507	1000	ml	42
Xylenol Orange Triturate	12	1096301	50	g	58
Zinc Acetate Solution	12	1102301	1000	ml	101
Zinc chloride solution, iodinated	12	1096602	1000	ml	217
Zinc chloride-formic acid solution	24	1096601	1000	ml	141
Zinc iodide and starch solution	12	1096502	100	ml	67
Zinc, activated	12	1096501	10	g	171
Zirconyl nitrate solution	24	1097201	100	ml	53

## Standard Solutions

Description	Validity	Ref	Volume	msr	Price
Acetaldehyde standard solution 100 times concentrated (10000 ppm C <sub>2</sub> H <sub>4</sub> O)	6	5000100C	100	ml	67
Acetaldehyde standard solution 100 times concentrated R1 (10000 ppm C <sub>2</sub> H <sub>4</sub> O)	6	5000101C	100	ml	56
Aluminium standard solution (200 ppm Al)	4	5000200	100	ml	43
Aluminium standard solution 10 times concentrated (1000 ppm Al)	12	5000203C	100	ml	43
Aluminium standard solution 100 times concentrated (1000 ppm Al)	12	5000201C	100	ml	46
Aluminium standard solution 100 times concentrated (200 ppm Al)	12	5000202C	100	ml	43
Ammonium standard solution 2.5 times concentrated (250 ppm NH <sub>4</sub> )	12	5000300C	100	ml	43
Ammonium standard solution 250 times concentrated (250 ppm NH <sub>4</sub> )	12	5000302C	100	ml	43
Ammonium standard solution 100 times concentrated (250 ppm NH <sub>4</sub> )	12	5000301C	100	ml	45
Ammonium standard solution 100 times concentrated (300 ppm NH <sub>4</sub> )	12	5006100C	100	ml	45
Antimony standard solution 10 times concentrate (10 ppm Sb)	12	5000400C	100	ml	43
Antimony standard solution (100 ppm Sb)	12	5000401	100	ml	44
Arsenic standard solution 100 times concentrated (1000 ppm As)	12	5000500C	100	ml	43
Barium standard solution 20 times concentrated (1000 ppm Ba)	12	5000600C	100	ml	43
Barium standard solution (0.1 per cent Ba)	12	5000601	100	ml	44
Bismuth standard solution 10 times concentrated (1000 ppm)	12	5005300C	100	ml	43
Cadmium standard solution (0.1 per cent Cd)	12	5000700	100	ml	43
Calcium standard solution 100 times concentrated (1000 ppm Ca)	12	5000803C	100	ml	43
Calcium standard solution 10 times concentrared (1000 ppm Ca)	12	5000801C	100	ml	46
Calcium standard solution 10 times concentrared R1(1000 ppm Ca)	12	5000804C	100	ml	46
Calcium standard solution 10 times concentrared (4000 ppm Ca)	12	5000800C	100	ml	43
Calcium standard solution alcoholic 10 times concentrared (1000 ppm Ca)	12	5000802C	100	ml	54
Chloride standard solution 10 times concentrated (500 ppm Cl)	12	5004100C	100	ml	43
Chloride standard solution 100 times concentrated (500 ppm)	12	5000901C	100	ml	43
Chloride standard solution 100 times concentrated (800 ppm Cl)	12	5000900C	100	ml	43

Chromium standard solution (0.1 per cent Cr)	12	5001002	100	ml	43
Chromium standard solution (100 ppm Cr)	12	5001000	100	ml	43
Cobalt standard solution (100 ppm Co)	12	5004300	100	ml	46
Copper standard solution (0.1 per cent Cu)	12	5001100	100	ml	43
Ferrocyanide standard solution 10 times concentrated (1000 ppm Fe(CN) <sub>6</sub> )	12	5001200C	100	ml	43
Ferrocyanide standard solution 100 times concentrated (5000 ppm Fe(CN) <sub>6</sub> )	12	5001300C	100	ml	46
Fluoride standard solution 20 times concentrated (200 ppm F)	12	5001400C	100	ml	43
Formaldehyde standard solution 200 times concentrated (1000 ppm CH <sub>2</sub> O)	12	5001500C	100	ml	43
Germanium standard solution (100 ppm Ge)	12	5004400	100	ml	46
Glyoxal standard solution 100 times concentrated (2000 ppm C <sub>2</sub> H <sub>2</sub> O <sub>2</sub> )	12	5003700C	100	ml	46
Iodide standard solution 100 times concentrated (1000 ppm I)	12	5003800C	100	ml	43
Iron standard solution (0.1 per cent Fe)	12	5001605	100	ml	43
Iron standard solution 10 times concentrated (200 ppm Fe)	12	5001600C	100	ml	43
Iron standard solution 10 times concentrated (80 ppm Fe)	12	5001602C	100	ml	43
Iron standard solution 40 times concentrated (10 000 ppm Fe)	12	5001606C	100	ml	43
Iron Standard Solutuion 100 times concentrated (1000 ppm Fe)	12	5001601C	100	ml	43
Lead standard solution 500 times concentrated (1000 ppm Pb)	12	5001703C	100	ml	43
Lead standard solution R1 10 times concentrated (100 ppm Pb)	12	5001706C	100	ml	43
Lead standard solution (0.1 per cent Pb)	12	5001700	100	ml	43
Lead standard solution R1(0.1 per cent Pb)	12	5005400	100	ml	44
Magnesium standard solution (0.1 per cent Mg)	12	5001803	100	ml	43
Magnesium standard solution 10 times concentrated (1000 ppm Mg)	12	5001800C	100	ml	43
Magnesium standard solution R1 100 times concentrated (1000 ppm)	12	5001802C	100	ml	43
Magnesium standard solution (1000 ppm Mg)	12	5006200	100	ml	43
Manganese standard solution (1000 ppm Mn)	12	5005800	100	ml	43
Manganese standard solution (100 ppm Mn)	12	5004500	100	ml	43
Mercury standard solution (1000 ppm Hg)	12	5001900	100	ml	43
Mercury standard solution 100 times concentrated (1000 ppm Hg)	12	5001901C	100	ml	43
Nickel standard solution 100 times concentrated (1000 ppm Ni)	12	5002000C	100	ml	43
Nitrate standard solution 10 times concentrated (1000 ppm NO <sub>3</sub> )	12	5002100C	100	ml	43
Palladium standard solution (500 ppm Pd)	12	5003600	100	ml	79
Palladium standard solution 10 times concentrated (200 ppm Pd)	12	5003602C	100	ml	79
Phosphate standard solution 100 times concentrated (500 ppm PO <sub>4</sub> )	12	5002200C	100	ml	43
Phosphate standard solution (200 ppm PO <sub>4</sub> )	12	5004200	100	ml	43
Platinum standard solution 10 times concentrated(300 ppm Pt).	12	5002300C	100	ml	79
Potassium standard solution (0.2 per cent K)	12	5002402	100	ml	43
Potassium standard solution 20 times concentrated (12000 ppm K)	12	5005100C	100	ml	46
Potassium standard solution 20 times concentrated (2000 ppm K)	12	5002400C	100	ml	43
Selenium standard solution (100 ppm Se)	12	5002500	100	ml	55
Selenium standard solution 40 times concentrated (40 ppm Se)	12	5002501C	100	ml	43
Sodium standard solution 10 times concentrated (2000 ppm Na)	12	5002700C	100	ml	43
Sodium standard solution (1000 ppm Na)	12	5005700	100	ml	43
Strontium standard solution (1.0 per cent Sr)	12	5003900	100	ml	43



Sulphate standard solution 10 times concentrated (1000 ppm)	12	5002802C	100	ml	43
Sulphate standard solution 100 times concentrated (1000 ppm)	12	5002800C	100	ml	43
Sulphate standard solution R1 100 times concentrated (1000 ppm SO <sub>4</sub> )	12	5002801C	100	ml	45
Sulfite standard solution 200 times concentrated (16000 ppm SO <sub>2</sub> )	12	5005500C	100	ml	50
Sulphite standard solution (1.5 ppm SO <sub>2</sub> )	12	5002900	100	ml	43
Thallium standard solution 10 times concentrated (100 ppm Tl)	12	5003000C	100	ml	43
Tin standard solution 100 times concentrated (500 ppm Sn)	12	5003100C	100	ml	43
Titanium standard solution (100 ppm Ti)	12	5003200	100	ml	43
Vanadium standard solution (1 g/l V)	12	5003300	100	ml	43
Zinc standard solution (5 mg/mL Zn)	12	5003400	100	ml	43
Zinc standard solution 10 times concentrated ( 1000 ppm Zn)	12	5003401C	100	ml	43
Zirconium standard solution (1 g/l Zr)	12	5003500	100	ml	43

## Buffer Solutions

Description	Validity	Ref	Volume	msr	Price
Buffered acetone solution	12	4000100	1000	ml	48
Buffer solution pH 2.0	12	4000200	1000	ml	48
Phosphate buffer solution pH 2.0	12	4007900	1000	ml	48
Sulphate buffer solution pH 2.0	12	4008900	1000	ml	55
Buffer solution pH 2.2	12	4010500	1000	ml	55
Buffer solution pH 2.5	12	4000300	1000	ml	55
Buffer solution pH 2.5 R1	12	4000400	1000	ml	55
Phosphate buffer solution pH 2.8	12	4010600	1000	ml	55
Buffer solution pH 3.0	12	4008000	1000	ml	48
Phosphate buffer solution pH 3.0	12	4000500	1000	ml	48
Phosphate buffer solution pH 3.0 R1	12	4010000	1000	ml	55
0.25 M Citrate buffer solution pH 3.0	12	4012600	100	ml	37
0.1 M Phosphate buffer solution pH 3.0	12	4011500	1000	ml	55
Phosphate buffer solution pH 3.2	12	4008100	1000	ml	55
Phosphate buffer solution pH 3.2 R1	12	4008500	1000	ml	55
Buffer solution pH 3.5	12	4000600	1000	ml	43
Phosphate buffer solution pH 3.5	12	4000700	1000	ml	48
Buffer solution pH 3.6	12	4000800	1000	ml	55
Buffer solution pH 3.7	12	4000900	1000	ml	55
Buffer copper sulphate solution pH 4.0	12	4001000	1000	ml	48
Sodium acetate buffer solution pH 4.0 (0.1 M)	12	4013800	1000	ml	57
Acetate buffer solution pH 4.4	12	4001100	1000	ml	48
Phtalate buffer solution pH 4.4	12	4001200	1000	ml	48
Acetate buffer solution pH 4.5	12	4012500	1000	ml	55
0.05 M Phosphate buffer solution pH 4.5	12	4009000	1000	ml	55
Sodium acetate buffer solution pH 4.5	12	4010100	1000	ml	48
Acetate buffer solution pH 4.6	12	4001400	1000	ml	48

Succinate buffer solution pH 4.6	12	4001500	1000	ml	55
Acetate buffer solution pH 4.7	12	4001600	1000	ml	55
Acetate buffer solution pH 4.7 R1	12	4013600	1000	ml	55
Acetate buffer solution pH 5.0	12	4009100	1000	ml	48
Citrate buffer solution pH 5.0	12	4010700	1000	ml	55
Phosphate buffer solution pH 5.0	12	4011300	1000	ml	55
Buffer solution pH 5.2	12	4001700	1000	ml	55
0.067 M Phosphate buffer solution pH 5.4	12	4012000	1000	ml	55
Acetate-edetate buffer solution pH 5.5	12	4001900	1000	ml	48
Buffer solution pH 5.5	12	4001800	1000	ml	48
Phosphate buffer solution pH 5.5	12	4002000	1000	ml	48
Phosphate-citrate buffer solution pH 5.5	12	4008700	1000	ml	48
Phosphate buffer solution pH 5.6	12	4011200	1000	ml	55
Phosphate buffer solution pH 5.8	12	4002100	1000	ml	55
Acetate buffer solution pH 6.0	12	4002200	1000	ml	48
Diethylammonium phosphate buffer solution pH 6.0	12	4002300	1000	ml	55
Phosphate buffer solution pH 6.0	12	4002400	1000	ml	48
Phosphate buffer solution pH 6.0 R1	12	4002500	1000	ml	55
Phosphate buffer solution pH 6.0 R2	12	4002600	1000	ml	55
Phosphate buffer solution pH 6.4	12	4002800	1000	ml	55
0.5M Phtalate buffer solution pH 6.4	12	4009200	1000	ml	55
Buffer solution pH 6.5	12	4002900	1000	ml	48
Imidazole buffer solution pH 6.5	12	4003000	1000	ml	55
0.1 M phosphate buffer solution pH 6.5	12	4010800	1000	ml	55
Phosphate buffer solution pH 6.5	12	4012800	1000	ml	55
Buffer solution pH 6.6	12	4003100	1000	ml	48
Phosphate buffered saline pH 6.8	12	4003200	1000	ml	55
Phosphate buffer solution pH 6.8	12	4003300	1000	ml	55
Phosphate buffer solution pH 6.8 R1	12	4003400	1000	ml	55
1 M tris-hydrochloride buffer solution pH 6.8	12	4009300	500	ml	103
Buffer solution pH 7.0	12	4003500	1000	ml	48
Maleate buffer solution pH 7.0	12	4003600	1000	ml	55
Phosphate buffer solution pH 7.0	12	4003700	1000	ml	48
0.025M Phosphate buffer solution pH 7.0	12	4009400	1000	ml	55
0.03M Phosphate buffer solution pH 7.0	12	4010300	1000	ml	55
0.05 M Phosphate buffer solution pH 7.0	12	4012400	1000	ml	55
0.063M Phosphate buffer solution pH 7.0	12	4009500	1000	ml	55
0.067M Phosphate buffer solution pH 7.0	12	4003800	1000	ml	55
0.03M Phosphate buffer solution pH 7.0 R1	12	4003900	1000	ml	55
0.1M Phosphate buffer solution pH 7.0	12	4008200	1000	ml	55
Phosphate buffer solution pH 7.0 R2	12	4004000	1000	ml	55
Phosphate buffer solution pH 7.0 R3	12	4008600	1000	ml	55
Phosphate buffer solution pH 7.0 R4	12	4010200	1000	ml	55
Phosphate buffer solution pH 7.0 R5	12	4011400	1000	ml	55
Tetrabutylammonium buffer solution pH 7.0	12	4010900	1000	ml	90
Buffered salt solution pH 7.2	12	4004300	1000	ml	55
Buffer solution pH 7.2	12	4004100	1000	ml	55

Phosphate buffer solution pH 7.2	12	4004200	1000	ml	48
Barbital buffer solution pH 7.4	12	4004700	1000	ml	48
Buffer solution pH 7.4	12	4004600	1000	ml	48
Imidazole buffer solution pH 7.4	12	4004500	1000	ml	55
Phosphate buffered saline pH 7.4	12	4005000	1000	ml	55
Phosphate buffer solution pH 7.4	12	4004800	1000	ml	48
Tris(hydroxymethyl)aminomethane buffer solution pH 7.4	12	4012100	500	ml	103
Tris(hydroxymethyl)aminomethane sodium chloride buffer solution pH 7.4	12	4004900	1000	ml	185
Tris(hydroxymethyl)aminomethane sodium chloride buffer solution pH 7.4 R1	12	4012200	100	ml	57
Tris-sodium acetate buffer solution pH 7.4	12	4012900	1000	ml	169
Tris-sodium acetate-sodium chloride buffer solution pH 7.4	12	4013000	1000	ml	185
Borate buffer solution pH 7.5	12	4005200	1000	ml	55
0.2M Phosphate buffer solution pH 7.5	12	4005400	1000	ml	55
0.33M Phosphate buffer solution pH 7.5	12	4005300	1000	ml	55
Tris(hydroxymethyl)aminomethane buffer solution pH 7.5	12	4005500	1000	ml	169
0.05 M Tris-hydrochloride buffer solution pH 7.5	12	4005600	1000	ml	169
Sodium citrate buffer solution pH 7.8 (0.034M sodium citrate, 0.101M sodium chloride)	12	4009800	1000	ml	55
0.0015 M Borate buffer solution pH 8.0	12	4006000	1000	ml	55
Buffer solution pH 8.0	12	4005900	1000	ml	48
Buffer solution pH 8.0 R1	12	4010400	1000	ml	55
0.02M Phosphate buffer solution pH 8.0	12	4006100	1000	ml	55
0.1M Phosphate buffer solution pH 8.0	12	4008400	1000	ml	55
1M Phosphate buffer solution pH 8.0	12	4007800	1000	ml	48
0.02 M Sodium phosphate buffer solution pH 8.0	12	4013700	1000	ml	55
Tris-hydrochloride buffer solution pH 8.0	12	4012300	100	ml	57
1 M Tris-hydrochloride buffer solution pH 8.0	12	4012700	1000	ml	169
Tris-sodium acetate buffer solution pH 8.0	12	4013100	1000	ml	95
Tris-sodium acetate-sodium chloride buffer solution pH 8.0	12	4013200	1000	ml	136
Tris(hydroxymethyl)aminomethane buffer solution pH 8.1	12	4006200	100	ml	57
Tris-glycine buffer solution pH 8.3	12	4006300	1000	ml	169
Tris-hydrochloride buffer solution pH 8.3	12	4011800	1000	ml	123
Barbital buffer solution pH 8.4	12	4006400	1000	ml	55
Tris(hydroxymethyl)aminomethane-EDTA buffer solution pH 8.4	12	4006600	500	ml	57
Phosphate buffer solution pH 8.5	12	4013300	1000	ml	55
Tris acetate buffer solution pH 8.5	12	4006700	1000	ml	55
Barbital buffer solution pH 8.6 R1	12	4006900	1000	ml	55
1.5M tris-hydrochloride buffer solution pH 8.8	12	4009900	1000	ml	48
Buffer solution pH 9.0	12	4007000	1000	ml	46
Buffer solution pH 9.0 R1	12	4007100	1000	ml	55
Buffer (phosphate) solution pH 9.0	12	4008300	1000	ml	48
0.05 M Tris-hydrochloride buffer solution pH 9.0	12	4013500	100	ml	57
Ammonium chloride buffer solution pH 9.5	12	4007200	1000	ml	48
Ammonium chloride buffer solution pH 10.0	12	4007300	1000	ml	43
Diethanolamine buffer solution pH 10.0	12	4007500	1000	ml	55

0.1 M Ammonium carbonate buffer solution pH 10.3	12	4011900	1000	ml	55
Ammonium chloride buffer solution pH 10.4	12	4011000	1000	ml	55
Borate buffer solution pH 10.4	12	4011100	1000	ml	55
Ammonium chloride buffer solution pH 10.7	12	4013400	1000	ml	57
Buffer solution pH 10.9	12	4007600	1000	ml	55
Total-ionic-strength-adjustment buffer	12	4007700	1000	ml	53
Total-ionic-strength-adjustment buffer R1	12	4008800	1000	ml	48

## Primary standards for volumetric solutions

Primary standards are prepared as per the methods described in chapter 4.2.1 of Ph Eur.

Each bottle is accompanied by a Certificate of Analysis.

Description	Validity	Ref	Volume	msr	Price
Benzoic Acid - C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	36	2000200	100	g	46
Potassium Bromate - KBrO <sub>3</sub>	36	2000300	50	g	46
Potassium Hydrogen Phthalate - C <sub>8</sub> H <sub>5</sub> KO <sub>4</sub>	36	2000400	50	g	46
Sodium Carbonate - Na <sub>2</sub> CO <sub>3</sub> (anhydrous)	36	2000500	50	g	46
Sodium Chloride - NaCl	36	2000600	250	g	46
Sulphanilic Acid - C <sub>6</sub> H <sub>7</sub> NO <sub>3</sub> S	36	2000700	100	g	46
Zinc - Zn	36	2000800	100	g	46

## Volumetric solutions

Volumetric solutions are prepared according to the usual chemical analytical methods. The accuracy of the apparatus used is verified to ensure that it is appropriate for the intended use.

The concentration of volumetric solutions is indicated in terms of molarity. Molarity expresses, as the number of moles, the amount of substance dissolved in 1 L of solution. The molarity of the volumetric solutions is determined by an appropriate number of titrations. The repeatability does not exceed 0.2 per cent (relative standard deviation).

Volumetric solutions are standardized by the methods described in Ph Eur and accompanied by a Certificate of Analysis.

The identity of C.P.A. Products Codes with Ph Eur Codes (seven-figure reference code which will remain unchanged for a given reagent during subsequent revisions) makes the desired product easy to find.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetic acid 0.1 M	24	3008900	1000	ml	43				
Ammonium and cerium nitrate 0.01 M	12	3000200	1000	ml	69				
Ammonium and cerium nitrate 0.1 M	24	3000100	1000	ml	119				
Ammonium and cerium sulphate 0.01M	12	3000400	1000	ml	69				

Ammonium and cerium sulphate 0.1M	12	3000300	1000	ml	198			
Ammonium thiocyanate 0.1M	24	3000500	1000	ml	35			
Barium chloride 0.1M	12	3000600	1000	ml	40			
Barium perchlorate 0.025M	12	3009600	1000	ml	39			
Barium perchlorate 0.05M	12	3000700	1000	ml	47			
Benzethonium chloride 0.004 M	24	3000900	1000	ml	35			
Bismuth nitrate 0.01 M	12	3010000	1000	ml	55			
Bromide-bromate 0.0167M	12	3001000	1000	ml	37			
Cerium sulphate 0.1 M	24	3001100	1000	ml	96			
Copper sulphate 0.02M	12	3001200	1000	ml	37			
Cupriethylenediamine hydroxide solution 1M	12	3008700	1000	ml	200			
Ferric ammonium sulphate 0.1M	24	3001300	1000	ml	86			
Ferrous sulphate 0.1M	6	3001400	1000	ml	65			
Hydrochloric acid 0.1M	24	3002100	1000	ml	26			
Hydrochloric acid 1M	24	3001800	1000	ml	26			
Hydrochloric acid 2M	24	3001700	1000	ml	30			
Hydrochloric acid 3M	24	3001600	1000	ml	30			
Hydrochloric acid 6M	24	3001500	1000	ml	30			
Hydrochloric acid, alcoholic 0.1M	12	3008800	1000	ml	45			
Iodine 0.01M	12	3002900	1000	ml	46	3002900a	100	ml 31
Iodine 0.05M	12	3002700	1000	ml	66			
Iodine 0.5M	12	3009400	1000	ml	105			
Lanthanum Nitrate 0.1M	12	3010100	1000	ml	145			
Lead nitrate 0.05M	12	3009700	1000	ml	39	3009700a	100	ml 26
Lead nitrate 0.1M	24	3003100	1000	ml	37			
Magnesium chloride 0.1M	24	3003400	1000	ml	61			
Nitric acid 1M	24	3003600	1000	ml	35			
Perchloric acid 0.025M	12	3009900	1000	ml	97	3009900a	100	ml 68
Perchloric acid 0.05M	12	3004000	1000	ml	97	3004000a	100	ml 68
Perchloric acid 0.1M	12	3003900	1000	ml	113			
Potassium bromate 0.0083M	12	3004500	1000	ml	63			
Potassium bromate 0.0167M	12	3004400	1000	ml	63			
Potassium bromate 0.02M	12	3004300	1000	ml	63			
Potassium bromate 0.033M	12	3004200	1000	ml	58			
Potassium dichromate 0.0167M	24	3004600	1000	ml	40			
Potassium hydrogen phthalate 0.1M	12	3004700	1000	ml	103			
Potassium Hydroxide 0.1M	24	3004800	1000	ml	39			
Potassium Hydroxide 1M	24	3009100	1000	ml	39			
Potassium Hydroxide alcoholic 0.01M	12	3009000	1000	ml	54			

Potassium Hydroxide alcoholic 0.1M	12	3005100	1000 ml	51			
Potassium Hydroxide alcoholic 0.5M	12	3005000	1000 ml	51			
Potassium Hydroxide in alcohol (60% v/v) 0.5M	12	3004900	1000 ml	55			
Potassium iodate 0.05M	12	3005200	1000 ml	44			
Potassium iodide 0.001M	6	3009200	1000 ml	45			
Potassium permanganate 0.02M	24	3005300	1000 ml	29			
Silver nitrate 0.001M	6	3009300	1000 ml	72	3009300a	500 ml	44
Silver nitrate 0.1M	24	3005600	1000 ml	121			
Sodium arsenite 0.1M	12	3005800	500 ml	64			
Sodium edetate 0.02M	24	3006000	1000 ml	29			
Sodium edetate 0.1M	24	3005900	1000 ml	29			
Sodium hydroxide 0.1M	24	3006600	1000 ml	20			
Sodium hydroxide 1M	24	3006300	1000 ml	20			
Sodium hydroxide 2M	12	3009800	1000 ml	39			
Sodium hydroxide, ethanolic 0.1M	12	3007000	1000 ml	62			
Sodium methoxide 0.1M	12	3007100	1000 ml	134			
Sodium nitrite 0.1M	6	3007200	1000 ml	40			
Sodium periodate 0.1M	12	3009500	1000 ml	91			
Sodium thiosulphate 0.1M	24	3007300	1000 ml	24			
Sulphuric acid 0.05M	24	3008000	1000 ml	24			
Sulphuric acid 0.5M	24	3007800	1000 ml	24			
Tetrabutylammonium hydroxide 0.1M	12	3008300	1000 ml	209	3008300a	100 ml	124
Tetrabutylammonium hydroxide in 2-propanol, 0.1M	12	3008400	1000 ml	197			
Zinc chloride 0.05M	24	3008500	1000 ml	50			
Zinc sulphate 0.1M	24	3008600	1000 ml	43			

## Residual solvents

The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) has adopted Impurities Guidelines for Residual Solvents which prescribes limits for the content of solvents which may remain in active substances, excipients and medicinal products after processing. The European Pharmacopoeia is, however, applying the same principles enshrined in the guideline to existing active substances, excipients and medicinal products whether or not they are the subject of a monograph of the Pharmacopoeia.

Residual solvents were evaluated for their possible risk to human health and placed into one of three classes as follows:

Class 1 solvents: Solvents to be avoided

Known human carcinogens, strongly suspected human carcinogens, and environmental hazards.

Class 2 solvents: Solvents to be limited

Non-genotoxic animal carcinogens or possible causative agents of other irreversible toxicity such as neurotoxicity or teratogenicity.

Solvents suspected of other significant but reversible toxicities.

Solvents with low toxic potential to man; no health-based exposure limit is needed.

#### **Residual Solvents Class 1- reference solution - 5 components (5 times concentrated) in Dimethylsulfoxide**

<b>Solvent</b>	<b>Concentration</b>
Benzene [CAS:71-43-2]	10 ppm
Tetrachloromethane (Carbon tetrachloride) [CAS:56-23-5]	20 ppm
1,2-Dichloroethane [CAS:107-06-2]	25 ppm
1,1-Dichloroethene [CAS:75-35-4]	40 ppm
Trichloroethene [CAS:79-01-6]	50 ppm

*Ref: F131680 – 1 ml ampoule – 25 EUR*

#### **Residual Solvents Class 2- 20 components (ready-to-use) in Dimethylsulfoxide**

<b>Solvent</b>	<b>Concentration</b>
Acetonitrile [CAS:75-05-8] ;	20.5ppm
Chlorobenzene [CAS:108-90-7]	18ppm
Cyclohexane [CAS:110-82-7]	194ppm
cis-1,2-Dichloroethene [CAS:156-59-2]	46.8ppm
trans-1,2-Dichloroethene [CAS:156-60-5]	46.8ppm
Dichloromethane [CAS:75-09-2]	30ppm
N,N-Dimethylacetamide [CAS:127-19-5]	54.5ppm
Dimethylformamide [CAS:68-12-02]	44ppm
Dioxan [CAS:123-91-1]	19ppm
2-Ethoxyethanol [CAS:110-80-5]	8ppm
Methanol [CAS:67-56-1]	150ppm
2-Methoxyethanol [CAS:109-86-4]	2.5ppm
Methylbutylketone [CAS:591-78-6]	2.5ppm
Methylcyclohexane [CAS:108-87-2]	59ppm
Tetrahydrofuran [CAS:109-99-9] ;	36ppm
Toluene [CAS:108-88-3]	44.5ppm
m-Xylene [CAS:108-38-3]	65.1ppm
p-Xylene [CAS:106-42-3]	15.2ppm
o-Xylene [CAS:95-47-6]	9.8ppm
Ethylbenzene [CAS:100-41-4]	18.5ppm

*Ref: F524720 – 1 ml ampoule – 75 EUR*



## Residual Solvents Class 2- 11 components (ready-to-use) in Dimethylsulfoxide

<b>Solvent</b>	<b>Concentration</b>
Chloroform [CAS:67-66-3]	3ppm
1,2-Dimethoxyethane [CAS:110-71-4]	5ppm
Ethyleneglycol [CAS:107-21-1]	31ppm
Formamide [CAS:75-12-7]	11ppm
n-Hexane [CAS:110-54-3]	14.5ppm
N-Methylpyrrolidone [CAS:872-50-4]	26.5ppm
Nitromethane [CAS:75-52-5]	2.5ppm
Pyridine [CAS:110-86-1]	10ppm
Sulfolan [CAS:126-33-0]	8ppm
Tetralin [CAS:119-64-2]	5ppm
1,1,2-Trichloroethene [CAS:79-01-6]	4ppm

*F524730 – 1 ml ampoule – 50 EUR*

# U.S. Pharmacopeia

## Reagents, Indicators, and Solutions

This section deals with the solutions required in conducting the Pharmacopeial and the National Formulary tests and assays.

As it is stated in the General Notices, listing of reagents, indicators, and solutions in the Pharmacopeia in no way implies that they have therapeutic utility; thus, any reference to the USP in their labeling is to include the term “reagent” or “reagent grade.”

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

Description	Validity	Ref	Volume	msr	Price
Acetic Acid, Diluted	24	USP350	1000	ml	39
Alcohol, 70 Percent	12	USP351	100	ml	44
Alcohol, 80 Percent	12	USP352	100	ml	44
Alcohol, 90 Percent	12	USP353	100	ml	44
Kit of alcoholic solution (70, 80, 90%)	12	USP354	3x100	ml	88
Alcohol, Aldehyde-free	12	USP355	1000	ml	154
Ammonium Hydroxide, 6 N	12	USP356	1000	ml	59
Diluted Acetic Acid —See Acetic Acid, Diluted.		USP350			
Diluted Hydrochloric Acid —See Hydrochloric Acid, Diluted.		USP362			
Diluted Nitric Acid —See Nitric Acid, Diluted.		USP364			
Diluted Sulfuric Acid —See Sulfuric Acid, Diluted.		USP367			
Hydrochloric Acid, Diluted (10 percent)	12	USP362	1000	ml	35
Methanol, Aldehyde-Free	12	USP363	1000	ml	182
Nitric Acid, Diluted (10 percent HNO <sub>3</sub> )	12	USP364	1000	ml	35
STANDARD NITROGEN SOLUTION (0.1 mg/ml N)	12	USP365	100	ml	43
POTASSIUM IODATE SOLUTION (0.25 N)	12	USP366	500	ml	58
Sulfuric Acid, Diluted (10 percent)	12	USP367	1000	ml	35

# 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.

Description	Validity	Ref	Volume	msr	Price
Hydrochloric Acid Buffer pH 1.2	6	USP001	200	ml	28
Hydrochloric Acid Buffer pH 1.3	6	USP002	200	ml	28
Hydrochloric Acid Buffer pH 1.4	6	USP003	200	ml	28
Hydrochloric Acid Buffer pH 1.5	6	USP004	200	ml	28
Hydrochloric Acid Buffer pH 1.6	6	USP005	200	ml	28
Hydrochloric Acid Buffer pH 1.7	6	USP006	200	ml	28
Hydrochloric Acid Buffer pH 1.8	6	USP007	200	ml	28
Hydrochloric Acid Buffer pH 1.9	6	USP008	200	ml	28
Hydrochloric Acid Buffer pH 2.0	6	USP009	200	ml	28
Hydrochloric Acid Buffer pH 2.1	6	USP010	200	ml	28
Hydrochloric Acid Buffer pH 2.2	6	USP011	200	ml	28
Acid Phthalate Buffer pH 2.2	6	USP012	200	ml	28
Acid Phthalate Buffer pH 2.4	6	USP013	200	ml	28
Acid Phthalate Buffer pH 2.6	6	USP014	200	ml	28
Acid Phthalate Buffer pH 2.8	6	USP015	200	ml	28
Acid Phthalate Buffer pH 3.0	6	USP016	200	ml	28
Acid Phthalate Buffer pH 3.2	6	USP017	200	ml	28
Acid Phthalate Buffer pH 3.4	6	USP018	200	ml	28
Acid Phthalate Buffer pH 3.6	6	USP019	200	ml	28
Acid Phthalate Buffer pH 3.8	6	USP020	200	ml	28
Acid Phthalate Buffer pH 4.0	6	USP021	200	ml	28
Neutralized Phthalate Buffer pH 4.2	6	USP022	200	ml	28
Neutralized Phthalate Buffer pH 4.4	6	USP023	200	ml	28
Neutralized Phthalate Buffer pH 4.6	6	USP024	200	ml	28
Neutralized Phthalate Buffer pH 4.8	6	USP025	200	ml	28
Neutralized Phthalate Buffer pH 5.0	6	USP026	200	ml	28
Neutralized Phthalate Buffer pH 5.2	6	USP027	200	ml	28
Neutralized Phthalate Buffer pH 5.4	6	USP028	200	ml	28
Neutralized Phthalate Buffer pH 5.6	6	USP029	200	ml	28
Neutralized Phthalate Buffer pH 5.8	6	USP030	200	ml	28
Phosphate Buffer pH 5.8	6	USP031	200	ml	28

Phosphate Buffer pH 6.0	6	USP032	200	ml	28
Phosphate Buffer pH 6.2	6	USP033	200	ml	28
Phosphate Buffer pH 6.4	6	USP034	200	ml	28
Phosphate Buffer pH 6.6	6	USP035	200	ml	28
Phosphate Buffer pH 6.8	6	USP036	200	ml	28
Phosphate Buffer pH 7.0	6	USP037	200	ml	28
Phosphate Buffer pH 7.2	6	USP038	200	ml	28
Phosphate Buffer pH 7.4	6	USP039	200	ml	28
Phosphate Buffer pH 7.6	6	USP040	200	ml	28
Phosphate Buffer pH 7.8	6	USP041	200	ml	28
Phosphate Buffer pH 8.0	6	USP042	200	ml	28
Alkaline Borate Buffer pH 8.0	6	USP043	200	ml	28
Alkaline Borate Buffer pH 8.2	6	USP044	200	ml	28
Alkaline Borate Buffer pH 8.4	6	USP045	200	ml	28
Alkaline Borate Buffer pH 8.6	6	USP046	200	ml	28
Alkaline Borate Buffer pH 8.8	6	USP047	200	ml	28
Alkaline Borate Buffer pH 9.0	6	USP048	200	ml	28
Alkaline Borate Buffer pH 9.2	6	USP049	200	ml	28
Alkaline Borate Buffer pH 9.4	6	USP050	200	ml	28
Alkaline Borate Buffer pH 9.6	6	USP051	200	ml	28
Alkaline Borate Buffer pH 9.8	6	USP052	200	ml	28
Alkaline Borate Buffer pH 10.0	6	USP053	200	ml	28
Acetate Buffer pH 4.1	6	USP054	200	ml	28
Acetate Buffer pH 4.3	6	USP055	200	ml	28
Acetate Buffer pH 4.5	6	USP056	200	ml	28
Acetate Buffer pH 4.7	6	USP057	200	ml	28
Acetate Buffer pH 4.9	6	USP058	200	ml	28
Acetate Buffer pH 5.1	6	USP059	200	ml	28
Acetate Buffer pH 5.2	6	USP060	200	ml	28
Acetate Buffer pH 5.3	6	USP061	200	ml	28
Acetate Buffer pH 5.4	6	USP062	200	ml	28
Acetate Buffer pH 5.5	6	USP063	200	ml	28
Acetate Buffer pH 3.5 for Heavy metals	12	USP064	1000	ml	94

## Colorimetric Solutions (CS)

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 .

Description	Validity	Ref	Volume	msr	Price
Cobaltous Chloride CS	12	USP065	100	ml	87
Cupric Sulfate CS	12	USP066	100	ml	58
Ferric Chloride CS	12	USP067	100	ml	63

## Indicator Solutions

See Test Solutions (TS)

## 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; fiftieth-normal, 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 gram-molecule of the reagent. Solutions containing, in 1000 mL, one-tenth of a gram-molecule 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.

Description	Validity	Ref	Volume	msr	Price
Acetic Acid, Double-Normal (2 N)	12	USP088	1000	ml	26
Ammonium Thiocyanate, Tenth-Normal (0.1 N)	12	USP089	1000	ml	31
Bromine, Tenth-Normal (0.1 N)	12	USP090	1000	ml	35
Ceric Ammonium Nitrate, Twentieth-Normal (0.05 N)	12	USP091	1000	ml	101
Ceric Sulfate, Tenth-Normal (0.1 N)	24	USP092	1000	ml	96
Cupric Nitrate, Tenth Normal (0.1 N)	12	USP093	1000	ml	64
Edetate Disodium, Twentieth-Molar (0.05 M)	24	USP094	1000	ml	44
Ferric Ammonium Sulfate, Tenth-Normal (0.1 N)	12	USP095	1000	ml	86
Ferrous Ammonium Sulfate, Tenth-Normal (0.1 N)	12	USP096	1000	ml	86
Hydrochloric Acid, Normal (1 N)	24	USP097	1000	ml	18
Hydrochloric Acid, Half-Normal (0.5 N)	24	USP098	1000	ml	22
Hydrochloric Acid, Half-Normal (0.5 N) in Methanol	24	USP099	1000	ml	99
Hydrochloric Acid, Alcoholic, Tenth-Molar (0.1 M)	24	USP100	1000	ml	99
Iodine, Tenth-Normal (0.1 N)	12	USP101	1000	ml	46
Iodine, Hundredth-Normal (0.01 N)	12	USP102	1000	ml	42
Lead Nitrate, Hundredth-Molar (0.01 M)	24	USP103	1000	ml	35

0.1 M Lead Nitrate	24	USP104	1000	ml	35
Lead Perchlorate, Tenth-Molar (0.1 M)	12	USP105	1000	ml	121
Lead Perchlorate, Hundredth Molar (0.01 M)	12	USP106	1000	ml	42
Lithium Methoxide, Fiftieth-Normal (0.02 N) in Methanol	12	USP107	1000	ml	314
Lithium Methoxide, Tenth-Normal (0.1 N) in Chlorobenzene	12	USP108	1000	ml	314
Lithium Methoxide, Tenth-Normal (0.1 N) in Methanol	12	USP109	1000	ml	314
Lithium Methoxide, Tenth-Normal (0.1 N) in Toluene	12	USP110	1000	ml	314
Mercuric Nitrate, Tenth-Molar (0.1 M)	12	USP111	1000	ml	121
Oxalic Acid, Tenth-Normal (0.1 N)	12	USP112	1000	ml	42
Perchloric Acid, Tenth-Normal (0.1 N) (in Glacial Acetic Acid)	12	USP113	1000	ml	121
Perchloric Acid, Tenth-Normal (0.1 N) in Dioxane	12	USP114	1000	ml	264
Potassium Bromate, Tenth-Normal (0.1 N)	12	USP115	1000	ml	58
Potassium Bromide–Bromate, Tenth-Normal (0.1 N)	12	USP116	1000	ml	46
Potassium Dichromate, Tenth-Normal (0.1 N)	24	USP117	1000	ml	35
Potassium Ferricyanide, Twentieth-Molar (0.05 M)	12	USP118	1000	ml	46
Potassium Hydroxide, Normal (1 N)	24	USP119	1000	ml	35
Potassium Hydroxide, Alcoholic, Half-Normal (0.5 N)	12	USP120	1000	ml	59
Potassium Hydroxide, Alcoholic, Tenth-Molar (0.1 M)	12	USP121	1000	ml	59
Potassium Hydroxide, Methanolic, Tenth-Normal (0.1 N)	12	USP122	1000	ml	66
Potassium Iodate, Twentieth-Molar (0.05 M)	12	USP123	1000	ml	46
Potassium Permanganate, Tenth-Normal (0.1 N)	12	USP124	1000	ml	26
Silver Nitrate, Tenth-Normal (0.1 N)	24	USP125	1000	ml	76
Sodium Arsenite, Twentieth-Molar (0.05 M)	12	USP126	1000	ml	64
Sodium Hydroxide, Normal (1 N)	12	USP127	1000	ml	20
Sodium Hydroxide, Alcoholic, Tenth-Normal (0.1 N)	12	USP128	1000	ml	48
Sodium Methoxide, Tenth-Normal (0.1 N) (in Toluene)	12	USP129	1000	ml	149
Sodium Methoxide, Half-Normal (0.5 N) in Methanol	12	USP130	1000	ml	127
Sodium Nitrite, Tenth-Molar (0.1 M)	12	USP131	1000	ml	35
Sodium Thiosulfate, Tenth-Normal (0.1 N)	24	USP132	1000	ml	24
Sulfuric Acid, Half-Normal (0.5 N) in Alcohol	24	USP133	1000	ml	59
Sulfuric Acid, Normal (1 N)	24	USP134	1000	ml	18
Tetrabutylammonium Hydroxide, Tenth-Normal (0.1 N)	3	USP135	100	ml	136
Tetrabutylammonium Hydroxide in Methanol/Isopropyl Alcohol, 0.1 N <sup>12</sup>		USP136	1000	ml	141
Tetramethylammonium Bromide, Tenth-Molar (0.1 M)	12	USP137	1000	ml	121
Tetramethylammonium Chloride, Tenth-Molar (0.1 M)	12	USP138	1000	ml	46
Zinc Sulfate, Twentieth-Molar (0.05 M), Tenth-Normal (0.1 N)	24	USP139	1000	ml	43

## 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.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetic acid 0.1 M	24	3008900	1000	ml	43				
Acetate Buffer TS	12	USP140	1000	ml	46				
Acetic Acid–Ammonium Acetate Buffer TS	24								
USP141	1000	ml	48						
Acetone, Buffered, TS	24	USP142	1000	ml	52				
Acid Ferric Chloride TS	12	USP143	100	ml	77				
Acid Stannous Chloride TS — See Stannous Chloride, Acid, TS.		USP328							
Acid Stannous Chloride TS, Stronger — See Stannous Chloride, Acid, Stronger, TS.		USP329							
Alcohol–Phenol TS	12	USP146	100	ml	77				
Alcoholic Mercuric Bromide TS — See Mercuric Bromide TS, Alcoholic.		USP247							
Alcoholic Potassium Hydroxide TS — See Potassium Hydroxide TS, Alcoholic.		USP292							
Alkaline Cupric Citrate TS — See Cupric Citrate TS, Alkaline.		USP199							
Alkaline Cupric Iodide TS — See Cupric Iodide TS, Alkaline.		USP201							
Alkaline Cupric Tartrate TS (Fehling's Solution)— See Cupric Tartrate TS, Alkaline.		USP204							
Alkaline Mercuric–Potassium Iodide TS — See Mercuric–Potassium Iodide TS, Alkaline.		USP252							
Amaranth TS	12	USP156	100	ml	77				
Ammonia–Ammonium Chloride Buffer TS	12	USP157	1000	ml	66				
Ammonia–Cyanide TS	6	USP158	100	ml	132				
Ammonia TS	12	USP159	1000	ml	43	USP159a	500	ml	30
Ammoniacal Potassium Ferricyanide TS	12	USP160	500	ml	48	USP160a	100	ml	33
Ammoniated Cupric Oxide TS — See Cupric Oxide, Ammoniated, TS		USP202							
Ammonium Acetate TS	12	USP162	100	ml	24	USP162a	1000	ml	50
Ammonium Carbonate TS	12	USP163	100	ml	30	USP163a	500	ml	55
Ammonium Chloride TS	24	USP164	100	ml	28	USP164a	1000	ml	55
Ammonium Chloride–Ammonium Hydroxide TS	12								
USP165	100	ml	30	USP165a	500	ml	44		
Ammonium Molybdate TS	12	USP166	100	ml	33	USP166a	500	ml	55
Ammonium Oxalate TS	24	USP167	100	ml	24	USP167a	1000	ml	55



Ammonium Phosphate, Dibasic, TS (Ammonium Phosphate TS)	24	USP168	100 ml	24	USP168a	500 ml	55
Ammonium Thiocyanate TS	18	USP169	100 ml	24	USP169a	1000 ml	55
Ammonium Vanadate TS	12	USP170	500 ml	39	USP170a	1000 ml	66
Antimony Trichloride TS	12	USP171	100 ml	0			
Barium Chloride TS	24	USP172	100 ml	25	USP172a	1000 ml	33
Barium Nitrate TS	24	USP173	100 ml	25	USP173a	500 ml	44
Biuret Reagent TS	24	USP174	1000 ml	33			
Blue Tetrazolium TS	12	USP175	100 ml	77			
Brilliant Blue G TS	12	USP176	100 ml	77			
Bromine TS	3	USP177	100 ml	41			
Bromine–Sodium Acetate TS	3	USP178	100 ml	77	USP178	500 ml	176
Bromocresol Blue TS —Use Bromocresol Green TS		USP180					
Bromocresol Green TS	24	USP180	100 ml	25			
Bromocresol Green–Methyl Red TS	12						
USP181	100	ml	30	USP181a	200 ml	61	
Bromocresol Purple TS	24	USP182	100 ml	28	USP182a	200 ml	57
Bromophenol Blue TS	24	USP183	100 ml	25			
Bromothymol Blue TS	24	USP184	100 ml	28			
Buffered Acetone TS —See Acetone, Buffered, TS.		USP142					
Calcium Chloride TS	12	USP186	100 ml	19	USP186a	500 ml	39
Calcium Sulfate TS	12	USP187	100 ml	33	USP187a	500 ml	72
Chloral Hydrate TS	12	USP188	100 ml	55			
Chromotropic Acid TS	12	USP189	100 ml	94			
Cobalt–Uranyl Acetate TS	12	USP190	100 ml	297			
Cobaltous Chloride TS	12	USP191	100 ml	39	USP191a	500 ml	83
Congo Red TS	24	USP192	100 ml	19			
m-Cresol Purple TS	24	USP193	100 ml	19			
Cresol Red TS	12	USP194	100 ml	19	USP194a	250 ml	33
Cresol Red–Thymol Blue TS	12	USP195	100 ml	19			
Crystal Violet TS	12	USP196	100 ml	25			
Cupric Acetate TS	12	USP197	100 ml	25	USP197a	500 ml	44
Cupric Acetate TS, Stronger (Barfoed's Reagent)	12	USP198	100 ml	248	USP198a	500 ml	57
Cupric Citrate TS	12	USP199	100 ml	44	USP199a	1000 ml	77
Cupric Citrate TS, Alkaline	12	USP200	100 ml	55	USP200a	1000 ml	99
Cupric Iodide TS, Alkaline	6	USP201	100 ml	83	USP201a	1000 ml	198
Cupric Oxide, Ammoniated, TS (Schweitzer's Reagent)	12	USP202	100 ml	77			
Cupric Sulfate TS	12	USP203	100 ml	19	USP203a	500 ml	39
Cupric Tartrate TS, Alkaline (Fehling's Solution) (A+B)	12	USP204	500+500 ml	99			

The Copper Solution (A)	12	USP205	500 ml	31				
The Alkaline Tartrate Solution (B)	12							
USP206	500	ml	77					
Delafield's Hematoxylin TS	6	USP207	100 ml	286	USP207a	500 ml	363	
Denigès' Reagent — See Mercuric Sulfate TS.		USP253						
Diazobenzenesulfonic Acid TS	12							
USP209	100	ml	55					
Dichlorofluorescein TS	12	USP210	100 ml	35	USP210a	500 ml	72	
Diluted Lead Subacetate TS — See Lead Subacetate TS, Diluted		USP239						
Dinitrophenylhydrazine TS	6	USP212	50 ml	50				
Diphenylamine TS	12	USP213	100 ml	28	USP213a	500 ml	61	
Diphenylcarbazone TS	12	USP214	100 ml	34				
Dragendorff's TS (A+B)	6	USP215	100 ml	66				
Edetate Disodium TS	12	USP216	500 ml	39	USP216a	1000 ml	66	
Eosin Y TS	12	USP217	50 ml	14				
Eriochrome Black TS	12	USP218	100 ml	39				
Eriochrome Cyanine TS	12	USP219	100 ml	35	USP219a	500 ml	66	
Fehling's Solution — See Cupric Tartrate TS, Alkaline		USP204						
Ferric Ammonium Sulfate TS	12	USP221	100 ml	19	USP221a	1000 ml	66	
Ferric Chloride TS	18	USP222	100 ml	26	USP222a	1000 ml	72	
Ferroun TS	12	USP223	100 ml	35				
Folin-Ciocalteu Phenol TS	12	USP224	100 ml	136	USP224a	1000 ml	374	
Formaldehyde TS	12	USP225	100 ml	51				
Glycerin Base TS	24	USP226	100 ml	48				
Hydroxylamine Hydrochloride TS	12							
USP227	100	ml	77					
8-Hydroxyquinoline TS	12	USP228	100 ml	72				
Indigo Carmine TS	3	USP229	100 ml	36				
Intestinal Fluid, Simulated, TS (without pancreatin)	12	USP230	500 ml	39	USP230a	100 ml	77	
Iodine, Diluted TS	12	USP231	1000 ml	37				
Iodine and Potassium Iodide TS 1	12	USP232	100 ml	37				
Iodobromide TS	12	USP233	100 ml	81	USP233a	500 ml	132	
Iodochloride TS	12	USP234	1000 ml	88				
Iron Salicylate TS	2	USP235	100 ml	61	USP235a	500 ml	94	
Lead Acetate TS	6	USP236	100 ml	33				
Lead Acetate TS, Alcoholic	12	USP237	100 ml	39	USP237a	500 ml	66	
Lead Subacetate TS	6	USP238	100 ml	72				
Lead Subacetate TS, Diluted	6	USP239	125 ml	55				

Litmus TS	12	USP240	100 ml	151			
Magnesia Mixture TS	6	USP241	100 ml	55			
Magnesium Sulfate TS	12	USP242	100 ml	48			
Malachite Green TS	12	USP243	100 ml	57			
Mayer's Reagent —See Mercuric–Potassium Iodide TS		USP251					
Mercuric Acetate TS	12	USP245	100 ml	57			
Mercuric–Ammonium Thiocyanate TS	18	USP246	500 ml	41	USP246a	1000 ml	77
Mercuric Bromide TS, Alcoholic	12	USP247	100 ml	72			
Mercuric Chloride TS	12	USP248	100 ml	26	USP248a	500 ml	83
Mercuric Iodide TS (Valser's Reagent)	6	USP249	100 ml	72			
Mercuric Nitrate TS	12	USP250	100 ml	176			
Mercuric–Potassium Iodide TS (Mayer's Reagent)	12	USP251	100 ml	39			
Mercuric–Potassium Iodide TS, Alkaline (Nessler's Reagent)	12	USP252	500 ml	97	USP252a	1000 ml	171
Mercuric Sulfate TS (Denigès' Reagent)	18	USP253	100 ml	39	USP253a	500 ml	83
Mercurous Nitrate TS	12	USP254	100 ml	99			
3-Methyl-2-benzothiazolinone Hydrazone Hydrochloride TS	6	USP255	100 ml	47			
Methyl Orange TS	24	USP256	100 ml	11			
Methyl Red TS	18	USP257	100 ml	18			
Methyl Violet TS —See Crystal Violet TS		USP196					
Methyl Yellow TS	18	USP259	100 ml	25			
Methyl Yellow–Methylene Blue TS	12	USP260	125 ml	48			
Methylene Blue TS	12	USP261	100 ml	25	USP261a	250 ml	55
Methylthionine Perchlorate TS	6	USP262	100 ml	54	USP262a	500 ml	85
Molybdo-phosphotungstate TS	12	USP263	100 ml	97			
2-Naphthol TS (Betanaphthol TS)	12	USP264	100 ml	23			
p-Naphtholbenzein TS	12	USP265	100 ml	23	USP265a	500 ml	55
N-(1-Naphthyl)ethylenediamine Dihydrochloride TS	6	USP266	100 ml	23			
Nessler's Reagent —See Mercuric– Potassium Iodide TS, Alkaline		USP252					
Neutral Red TS	12	USP268	100 ml	19			
Nickel Standard Solution TS (100 times concentrated)	12	USP269	100 ml	43			
p-Nitroaniline TS	12	USP270	100 ml	39	USP270a	500 ml	83
Orthophenanthroline TS	12	USP271	100 ml	77			
Oxalic Acid TS	24	USP272	500 ml	25	USP272a	1000 ml	41
Palladium Chloride TS, Buffered USP273	12 100		ml ml	242			
Perchloric Acid TS	12	USP274	100 ml	23	USP274a	500 ml	50
Phenol Red TS	18	USP275	100 ml	21	USP275a	500 ml	44

pH 4.7 Phenol Red TS	18	USP276	100 ml	23	USP276a	500 ml	48
Phenoldisulfonic Acid TS	12	USP277	100 ml	66			
Phenolphthalein TS	24	USP278	100 ml	19			
Phenylhydrazine Acetate TS	12	USP279	100 ml	43	USP279a	500 ml	77
Phenylhydrazine–Sulfuric Acid TS	12	USP280	100 ml	24	USP280a	500 ml	44
Phloroglucinol TS	12	USP281	100 ml	24	USP281a	500 ml	44
Phosphomolybdic Acid TS	12	USP282	100 ml	88	USP282a	500 ml	352
Phosphotungstic Acid TS	12	USP283	100 ml	28	USP283a	500 ml	61
Platinic Chloride TS	12	USP284	10 ml	539			
Platinum–Cobalt TS	24	USP285	100 ml	61	USP285a	1000 ml	372
Potassium Acetate TS	12	USP286	100 ml	44	USP286a	500 ml	99
Potassium–Bismuth Iodide TS	12	USP287	500 ml	130			
Potassium Carbonate TS	18	USP288	100 ml	21	USP288a	500 ml	44
Potassium Chromate TS	24	USP289	100 ml	21	USP289a	500 ml	44
Potassium Dichromate TS	24	USP290	100 ml	23	USP290a	500 ml	52
Potassium Hydroxide TS	24	USP291	100 ml	19	USP291a	500 ml	29
Potassium Hydroxide TS, Alcoholic —Use 0.5 N Potassium Hydroxide, Alcoholic (see in the section Volumetric Solutions)		USP120					
Potassium Iodide TS	12	USP294	100 ml	25	USP294a	500 ml	61
Potassium Iodide and Starch TS	12	USP295	100 ml	31			
Potassium Iodoplatinate TS	12	USP296	50 ml	158			
Potassium Permanganate TS —Use 0.1 N Potassium Permanganate (see in the section Volumetric Solutions)		USP124					
Potassium Pyroantimonate TS	12	USP299	100 ml	37			
Potassium Sulfate TS	24	USP300	100 ml	21	USP300a	500 ml	44
Potassium Thiocyanate TS	24	USP301	100 ml	21	USP301a	500 ml	44
Quinaldine Red TS	24	USP302	100 ml	37			
Resorcinol TS	12	USP303	100 ml	23			
Ruthenium Red TS	12	USP304	100 ml	121			
Schweitzer's Reagent —See Cupric Oxide, Ammoniated, TS		USP202					
Silver–Ammonia–Nitrate TS	6	USP306	100 ml	68			
Silver–Ammonium Nitrate TS —See Silver–Ammonia–Nitrate TS		USP306					
Silver Nitrate TS —Use 0.1 N Silver Nitrate (see in the section Volumetric Solutions).		USP125					
Simulated Intestinal Fluid TS —See Intestinal Fluid, Simulated, TS		USP230					
Sodium Acetate TS	24	USP310	100 ml	40			
Sodium Alizarinsulfonate TS	6	USP311	100 ml	23			

Sodium Aminoacetate TS (Sodium Glycinate TS)	12	USP312	500 ml	43	USP312a	1000 ml	77
Sodium Carbonate TS	24	USP313	100 ml	21	USP313a	1000 ml	81
Sodium Chloride TS, Alkaline	24	USP314	100 ml	19			
Sodium Citrate TS	24	USP315	250 ml	24			
Sodium Citrate TS, Alkaline	24	USP316	250 ml	30			
Sodium Cobaltinitrite TS	12	USP317	50 ml	88			
Sodium Fluoride TS	12	USP318	100 ml	43			
Sodium Hydroxide TS	24	USP319	100 ml	17	USP319a	1000 ml	24
Sodium Iodohydroxyquinolinesulfonate TS	12	USP320	250 ml	97			
Dibasic Sodium Phosphate TS	12	USP321	100 ml	43			
Sodium Phosphotungstate TS	12	USP322	100 ml	77			
Sodium Tartrate TS	24	USP323	100 ml	19	USP323a	500 ml	44
Sodium Tetraphenylboron TS	24	USP324	100 ml	35			
Sodium Thiosulfate TS —Use 0.1 N Sodium Thiosulfate (see in the section Volumetric Solutions).		USP132					
Stannous Chloride, Acid, TS	3	USP328	100 ml	37			
Stannous Chloride, Acid, Stronger, TS	3	USP329	100 ml	44			
Starch Iodide Paste TS	6	USP330	100 ml	48			
Starch TS	6	USP331	100 ml	31			
Stronger Cupric Acetate TS —See Cupric Acetate TS, Stronger		USP198					
Sudan III TS	12	USP333	50 ml	24			
Sudan IV TS	12	USP334	100 ml	31			
Sulfanilic Acid TS	12	USP335	100 ml	20	USP335a	500 ml	48
Sulfanilic- -Naphthylamine TS — See Sulfanilic-1-Naphthylamine TS.		USP337					
Sulfanilic-1-Naphthylamine TS	12	USP337	100 ml	154			
Sulfomolybdic Acid TS	18	USP338	100 ml	31	USP338a	500 ml	61
Sulfuric Acid TS	6	USP339	100 ml	36			
Tetramethylammonium Hydroxide TS	12	USP340	100 ml	172			
Thioacetamide TS	6	USP341	100 ml	24			
Thorium Nitrate TS	12	USP342	100 ml	55			
Thymol Blue TS	24	USP343	100 ml	32			
Thymolphthalein TS	24	USP344	100 ml	30			
Titanium Trichloride TS	12	USP345	100 ml	768			
Titanium Trichloride–Sulfuric Acid TS	12	USP346	100 ml	422			
p-Toluenesulfonic Acid TS	12	USP347	100 ml	70			
Trinitrophenol TS (Picric Acid TS)	24	USP348	100 ml	31	USP348a	500 ml	61
Triphenyltetrazolium Chloride TS	12	USP349	100 ml	36	USP349a	500 ml	76
Zinc Uranyl Acetate TS	12	USP357	100 ml	105			

## Indicators and 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. of pH meters, (b) in the preparation of dosage forms that approach isotonicity, (c) in analytical stability of various dosage forms.

Description	Validity	Ref	Volume	msr	Price
Cupric Sulfate Test Paper	12	USP068	pack of 50	ml	134
Lead Acetate Test Paper	12	USP069	pack of 50	ml	134
Mercuric Bromide Test Paper	12	USP070	pack of 50	ml	134
Methyl Yellow Paper	12	USP071	pack of 50	ml	33
Phenolphthalein Paper	12	USP072	pack of 50	ml	28
Starch Iodate Paper	12	USP073	pack of 50	ml	134
Starch Iodide Paper	12	USP074	pack of 50	ml	40
Thiazole Yellow Paper	12	USP075	pack of 50	ml	33

## 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.

Description	Validity	Bottle	Ref	Volume	msr	Price
Standard Arsenic Solution	12	HDPE	USP076	100	ml	43
Standard Chloride Solution	12	HDPE	USP077	100	ml	43
Standard Calcium Solution	12	HDPE	USP078	100	ml	43
Standard Potassium Solution	6	HDPE	USP079	100	ml	43
Standard Sodium Solution	6	HDPE	USP080	100	ml	43
Standard Strontium Solution	6	HDPE	USP081	100	ml	43
Lead Nitrate Stock Solution	12	HDPE	USP082	100	ml	43
Standard Nitrate Solution	6	HDPE	USP083	100	ml	43
Brucine Sulfate Solution	12	HDPE	USP084	100	ml	43
Standard Phosphate Solution	6	HDPE	USP085	100	ml	43
Phosphate Reagent A	12	HDPE	USP086	100	ml	43
Standard Sulfate Solution	12	HDPE	USP087	100	ml	43

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## Appendix I A. General Reagents

The specifications given for reagents do not necessarily guarantee their quality for use in medicines.

Some of the reagents included may be injurious to health unless adequate precautions are taken. They should be handled in accordance with good laboratory practice and any relevant regulations such as those issued in the United Kingdom in accordance with the Health and Safety at Work etc. Act (1974).

Reagents in aqueous solution are prepared using water R. Reagent solutions used in the limit tests for barium, calcium and sulphates are prepared using distilled water R. Where the name of the solvent is not stated, an aqueous solution is intended.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetic Acid	24	BP001	100	ml	24	BP001a	1000	ml	37
Acetic Acid, Dilute	24	BP002	1000	ml	39				
Acetic Anhydride Solution R1	12	BP003	100	ml	86	BP003a	1000	ml	317
Acetylacetone Reagent R1	12	BP004	100	ml	50				
Alcohol, Aldehyde-free	12	BP005	1000	ml	142				
Alizarin S Solution	12	BP006	100	ml	43				
Aluminium Chloride Reagent	12	BP007	1000	ml	103	BP007a	100	ml	39
Aluminium Chloride Solution	12	BP008	100	ml	72				
Amaranth Solution	12	BP009	100	ml	29				
Amido Black 10B Solution	12	BP010	100	ml	40				
4-Aminobenzoic Acid Solution - Solution A	12	BP011	100	ml	114				
Aminohippuric Acid Reagent	12	BP012	100	ml	43				
Aminomethylalizarindiacetic Acid Reagent (Sol A+B+C)	3	BP01350+50+100	ml	222					
Aminomethylalizarindiacetic Acid Solution	3	BP014	1000	ml	106				
Aminophenazone Solution	12	BP015	100	ml	32				
Ammonia R1, Dilute	12	BP016	1000	ml	40				
Ammonia R2, Dilute	12	BP017	1000	ml	92				
Ammonia R3, Dilute	12	BP018	1000	ml	40				
Ammonium Carbonate Solution	12	BP019	1000	ml	142				
Ammonium Carbonate Solution, Dilute	12	BP020	100	ml	40				
Ammonium Chloride Solution	12	BP021	1000	ml	70				
Ammonium Citrate Solution	12	BP022	1000	ml	70				
Ammonium Iron(III) Sulphate Solution R1	12	BP023	100	ml	43				
Ammonium Iron(III) Sulphate Solution R2	12	BP024	1000	ml	59				
Ammonium Iron(III) Sulphate Solution R5	12	BP025	100	ml	47				
Ammonium Iron(III) Sulphate Solution R6	12	BP026	100	ml	59				



Ammonium Mercaptoacetate Solution	12	BP027	500 ml	70
Ammonium Mercurithiocyanate Reagent	12	BP028	1000 ml	88
Ammonium Metavanadate Solution	12	BP029	100 ml	48
Ammonium Molybdate Solution	12	BP030	1000 ml	76
Ammonium Molybdate Solution R2	12	BP031	50 ml	37
Ammonium molybdate solution R3 (I+II)	12	BP032	200+800 ml	118
Ammonium Molybdate Solution R6	12	BP033	100 ml	42
Ammonium Molybdate-Sulphuric Acid Solution	12	BP034	100 ml	57
Ammonium Oxalate Solution	12	BP035	1000 ml	85
Ammonium Thiocyanate Solution	24	BP036	1000 ml	85
Ammonium Vanadate Solution	12	BP037	100 ml	48
Anisaldehyde Solution	12	BP038	100 ml	48
Anisaldehyde Solution R1	12	BP039	100 ml	35
Antimony Trichloride in Dichloroethane Solution	6	BP040	100 ml	150
Antimony Trichloride Solution	12	BP041	100 ml	97
Antimony Trichloride Solution R1 (Solution A)	6	BP042	100 ml	149
Arsenite Solution	12	BP043	100 ml	35
Ascorbic Acid Solution	12	BP044	100 ml	45
Azomethine H Solution	12	BP045	100 ml	45
Barium Chloride Solution	12	BP046	1000 ml	81
Barium Chloride Solution R1	12	BP047	1000 ml	81
Barium Chloride Solution R2	12	BP048	1000 ml	81
Barium Hydroxide Solution	24	BP049	1000 ml	75
Bismuth Oxynitrate Solution	24	BP050	500 ml	79
Bismuth subnitrate solution				
See Bismuth Oxynitrate Solution		BP050		
Biuret Reagent	12	BP051	1000 ml	52
Blocking Solution	24	BP052	1000 ml	35
Borate Solution	24	BP053	1000 ml	59
Boric Acid Solution	12	BP054	100 ml	48
Boric Acid Solution, Cold Saturated	6	BP055	100 ml	57
0.05M Bromine	12	BP056	1000 ml	57
Bromine Solution	12	BP057	100 ml	46
Bromine Solution, Acetic	6	BP058	1000 ml	106
Bromine Water	3	BP059	100 ml	40
Bromocresol Green Solution	24	BP060	100 ml	29
Bromocresol Green-Methyl Red Solution	12	BP061	100 ml	29
Bromocresol Purple Solution	24	BP062	100 ml	29
Bromophenol Blue Solution	24	BP063	100 ml	29

Bromophenol Blue Solution R1	24	BP064	100 ml	29
Bromophenol Blue Solution R2	24	BP065	100 ml	29
Bromothymol Blue Solution R1	24	BP066	100 ml	29
Bromothymol Blue Solution R2	24	BP067	100 ml	46
Bromothymol Blue Solution R3	24	BP068	100 ml	43
BRP Indicator Solution	12	BP069	100 ml	29
Cadmium Iodide Solution	6	BP070	100 ml	44
Calcium Chloride Solution	24	BP071	1000 ml	94
Calcium Chloride Solution, 0.01M	24	BP072	100 ml	35
Calcium Sulphate Solution	12	BP073	100 ml	48
Calconcarboxylic acid triturate	12	BP074	50 ml	69
Cerium(III) Nitrate Solution	12	BP075	1000 ml	64
Chloral Hydrate Solution	12	BP076	100 ml	64
2-Chloroethanol Solution	12	BP077	50 ml	57
Chloroform, Acidified	12	BP078	100 ml	43
Chloroform Water	12	BP079	1000 ml	40
Chromotrope IIB Solution	12	BP080	100 ml	50
Chromotropic Acid-Sulphuric Acid Solution	6	BP081	100 ml	43
Citric-Molybdic Acid Solution	6	BP082	100 ml	147
Congo Red Paper	12	BP083	pack of 50	29
Congo Red Solution	24	BP084	100 ml	50
Coomassie Staining Solution	12	BP085	100 ml	57
Copper Chloride-Pyridine Reagent	6	BP086	100 ml	84
Copper Edetate Solution	12	BP087	1000 ml	84
Copper Oxide Solution, Ammoniacal	12	BP088	100 ml	75
Copper Sulphate Solution	24	BP089	1000 ml	75
Copper Sulphate Solution, Weak	12	BP090	1000 ml	62
Copper Tetrammine, Ammoniacal Solution of	12	BP091	100 ml	62
m-Cresol Purple Solution	12	BP092	100 ml	29
Cresol Red Solution	24	BP093	100 ml	29
Crystal Violet Solution	12	BP094	100 ml	29
Cupriethylenediamine Hydroxide Solution	12	BP095	1000 ml	86
Cupri-citric Solution	12	BP096	1000 ml	86
Cupri-citric solution R1	12	BP097	1000 ml	127
Cupri-tartaric solution (I+II)	12	BP098	500+500 ml	127
Cupri-tartaric Solution R1 (A+B)	12	BP099	500+500 ml	127
Cupri-tartaric solution R4 (I+II)	12	BP100	500+500 ml	69
Destaining Solution	24	BP101	1000 ml	69
Developer Solution	12	BP102	500 ml	66

Dichloroacetic Acid Solution	12	BP103	500 ml	81
Dichloromethane, Acidified	12	BP104	100 ml	134
Dichloromethane Reagent	12	BP105	1000 ml	43
Digoxin Reagent	12	BP106	100 ml	55
Dimethyl Yellow and Oracet Blue Solution	12	BP107	100 ml	29
Dimethyl Yellow Solution	12	BP108	100 ml	128
Dimethylaminobenzaldehyde Reagent	3	BP109	100 ml	128
Dimethylaminobenzaldehyde Solution R6	3	BP110	100 ml	128
Dimidium Bromide-Sulphan Blue Mixed Solution	12	BP111	500 ml	175
Dinitrobenzene Solution	12	BP112	1000 ml	128
Dinitrobenzoic Acid Solution	12	BP113	1000 ml	175
Dioxan Solution	12	BP114	100 ml	112
Dioxan Solution R1	12	BP115	50 ml	72
Dioxan Stock Solution	12	BP116	100 ml	116
Diphenylamine Solution	12	BP117	1000 ml	37
Diphenylamine Solution R1	12	BP118	1000 ml	72
Diphenylcarbazone mercuric reagent (I+II)	12	BP119	100+100 ml	59
Disodium Hydrogen Phosphate Solution	12	BP120	1000 ml	59
Dithizone Solution R2	12	BP121	100 ml	128
Divanadium Pentoxide Solution in Sulphuric Acid	24	BP122	100 ml	97
Ethyl acetate, treated	3	BP123	1000 ml	259
Ethylene Oxide Solution R5	12	BP124	10 ml	97
Ethylene Oxide Stock Solution	12	BP125	10 ml	132
Ethylene Oxide Stock Solution R1	12	BP126	10 ml	97
Ferric ammonium sulphate solution R1				
See Ammonium Iron(III) Sulphate Solution R1		BP023		
Ferric ammonium sulphate solution R2				
See Ammonium Iron(III) Sulphate Solution R1		BP024		
Ferric ammonium sulphate solution R5				
See Ammonium Iron(III) Sulphate Solution R5		BP025		
Ferric ammonium sulphate solution R6				
See Ammonium Iron(III) Sulphate Solution R6		BP026		
Ferric Chloride Solution R1				
See Iron(III) chloride solution R1		BP165		
Ferric Chloride Solution R2				
See Iron(III) chloride solution R2		BP166		
Ferric Chloride Solution R3	12	BP127	100 ml	57
Ferric Chloride-Sulphamic Acid Reagent				
See Iron(III) chloride-sulphamic acid reagent		BP167		

Ferroin				
See Ferroin solution		BP128		
Ferroin Solution	24	BP128	100 ml	46
Fixing Solution	6	BP129	500 ml	58
Fixing Solution for Isoelectric Focusing in Polyacrylamide Gel	6	BP130	500 ml	81
Fluorenone Solution	6	BP131	500 ml	92
Formamide, treated	6	BP132	100 ml	59
Fuchsin Solution, Basic	12	BP133	100 ml	26
Fuchsin Solution, Decolorised	12	BP134	100 ml	26
Fuchsin Solution R1, Decolorised	12	BP135	100 ml	26
Holmium perchlorate solution	12	BP136	3x10 ml	167
Hydrochloric Acid, Brominated	12	BP137	100 ml	62
Hydrochloric Acid, Dilute	24	BP138	1000 ml	54
Hydrochloric Acid, Ethanolic (no molarity is stated)	24	BP139	1000 ml	117
Hydrochloric Acid, Ethanolic				
Specify Molarity		BP140		
Hydrochloric Acid, Methanolic				
Specify Molarity		BP141		
Hydrochloric Acid R1	24	BP142	1000 ml	56
Hydrochloric Acid R1, Dilute	24	BP143	1000 ml	56
Hydrochloric Acid R2, Dilute	24	BP144	1000 ml	56
Hydrochloric Acid, Stannated	24	BP145	100 ml	48
Hydroquinone Solution	6	BP146	100 ml	53
Hydroxylamine Hydrochloride Solution R2	12	BP147	100 ml	86
Hydroxylamine Solution, Alcoholic	12	BP148	100 ml	73
Hydroxylamine solution, alkaline (I+II)	12	BP149	500+500 ml	146
Hydroxylamine solution, alkaline R1 (I+II)	12	BP150	100+100 ml	81
Hypophosphorous reagent	6	BP151	100 ml	105
Imidazole, Recrystallised	12	BP152	100 ml	88
Imidazole Solution	12	BP153	100 ml	253
Imidazole–Mercury Reagent	12	BP154	100 ml	270
Indigo Carmine Solution	12	BP155	100 ml	29
Indigo Carmine Solution R1	12	BP156	1000 ml	86
Iodine Bromide Solution	12	BP157	1000 ml	176
Iodine Chloride Solution	12	BP158	100 ml	45
Iodine Monochloride Reagent, Strong	6	BP159	100 ml	264
Iodine Solution, Alcoholic	12	BP160	1000 ml	149
Iodine Solution, Chloroformic	12	BP161	1000 ml	149
Iodine Solution R4	12	BP162	1000 ml	86

Iodoplatinate Reagent	12	BP163	200 ml	147
Iron(III) Chloride Solution, Ethanolic	12	BP164	100 ml	56
Iron(III) Chloride Solution R1	12	BP165	1000 ml	68
Iron(III) Chloride Solution R2	12	BP166	1000 ml	64
Iron(III) Chloride-Sulphamic Acid Reagent	12	BP167	1000 ml	68
Iron(III) Nitrate Solution	24	BP168	100 ml	43
Isatin Reagent	6	BP169	100 ml	52
Isoniazid Solution	12	BP170	200 ml	58
Lanthanum Chloride Solution	24	BP171	1000 ml	103
Lanthanum Nitrate Solution	24	BP172	1000 ml	312
Lead Acetate Cotton	12	BP173	10 g	88
Lead Acetate Paper	12	BP174	pack of 50	147
Lead Acetate Solution	6	BP175	1000 ml	61
Lead Nitrate Solution	12	BP176	1000 ml	51
Lead Subacetate Solution	12	BP177	100 ml	44
Lithium and Sodium Molybdotungstophosphate Solution				
See Phosphomolybdotugstic reagent		BP242		
Litmus Paper, Blue	12	BP178	pack of 50	147
Litmus Paper, Red	12	BP179	pack of 50	147
Litmus Solution	12	BP180	250 ml	147
Magnesium Nitrate Solution	12	BP181	100 ml	51
Magnesium Nitrate Solution R1 (10 times concentrated)	12	BP182	100 ml	43
Magneson Reagent	12	BP183	100 ml	29
Magneson Solution	12	BP184	100 ml	47
Malachite Green Solution	6	BP185	100 ml	37
Mercuric Acetate Solution				
See Mercury(II) acetate solution		BP186		
Mercuric Bromide Paper				
See Mercury(II) bromide paper.		BP187		0
Mercuric Chloride Solution				
See Mercury(II) chloride solution		BP188		0
Mercuric Sulphate Solution				
See Mercury(II) sulphate solution.		BP189		0
Mercury(II) Acetate Solution	6	BP186	100 ml	51
Mercury(II) Bromide Paper	12	BP187	pack of 50	147
Mercury(II) Chloride Solution	12	BP188	100 ml	29
Mercury(II) Sulphate Solution	12	BP189	100 ml	29
Mercury, nitric acid solution of	6	BP190	100 ml	29
Metanil Yellow Solution	12	BP191	100 ml	29

Methanesulphonic Acid, Methanolic				
Specify Molarity		BP192		
Methanol, Acidified	12	BP193	1000 ml	70
Methanol, Aldehyde-free	24	BP194	1000 ml	80
Methanol, Anhydrous	24	BP195	1000 ml	80
Methanol, Hydrochloric	24	BP196	100 ml	29
Methoxyphenylacetic Acid Reagent	12	BP197	30 ml	317
Methyl 4-acetylbenzoate reagent	6	BP198	100 ml	86
Methyl Orange Mixed Solution	12	BP199	100 ml	29
Methyl Orange Solution	24	BP200	100 ml	29
Methyl Orange-Xylene Cyanol FF Solution	12	BP201	100 ml	37
Methyl Red Mixed Solution	12	BP202	100 ml	29
Methyl Red Solution	24	BP203	100 ml	29
Methyl Thymol Blue Mixture	12	BP204	50 ml	77
Molybdovanadic Reagent	12	BP205	100 ml	29
Mordant Black 11 Mixed Triturate	12	BP206	100 g	37
Mordant Black 11 Solution	6	BP207	100 ml	29
Mordant Black 11 Triturate	24	BP208	100 g	29
Naphthalene Black Solution	12	BP209	100 ml	37
Naphthalenediol Reagent Solution	12	BP210	200 ml	76
1-Naphthol Solution, Strong	12	BP211	100 ml	34
Naphtholbenzein Solution				
See 1-Naphtholbenzein solution		BP212		
1-Naphtholbenzein Solution	24	BP212	100 ml	29
Neutral Red Solution	12	BP213	100 ml	33
Nickel Chloride Solution, Ammoniacal	12	BP214	100 ml	43
Nile Blue A Solution	12	BP215	100 ml	45
Ninhydrin and stannous chloride reagent R1 (A +B)	3	BP216	100+100 ml	66
Ninhydrin Reagent I	3	BP217	1000 ml	497
Ninhydrin Solution	12	BP218	100 ml	35
Ninhydrin Solution R1	12	BP219	100 ml	35
Ninhydrin Solution R2	12	BP220	100 ml	42
Sodium metabisulphite 45.5 g/l solution	12	BP221	100 ml	37
Ninhydrin Solution R3	12	BP222	100 ml	46
Nitric Acid, Lead-free, Dilute	24	BP223	100 ml	32
Nitric Acid, Dilute	24	BP224	100 ml	25
Nitrochromic Reagent	24	BP225	100 ml	54
Nitro-molybdovanadic Reagent				
See Nitro-vanado-molybdic reagent		BP226		

Nitro-vanado-molybdic Reagent	12	BP226	500 ml	72			
Oxalic Acid and Sulphuric Acid Solution	12	BP227	1000 ml	92			
Palladium Chloride Solution (to be diluted)	24	BP228	100 ml	193			
Pararosaniline Solution, Decolorised	6	BP229	100 ml	77			
Perchloric Acid Solution	24	BP230	100 ml	29			
Periodic Acetic Acid Solution	12	BP231	100 ml	80			
Phenol Red Solution	24	BP232	100 ml	29			
Phenol Red Solution R1	12	BP233	500 ml	73	BP233a	100 ml	32
Phenol Red Solution R2	24	BP234	500 ml	52	BP234a	100 ml	32
Phenol Red Solution R3	24	BP235	500 ml	52	BP235a	100 ml	32
Phenoldisulphonic Acid Solution	12	BP236	30 ml	57			
Phenolphthalein Solution	24	BP237	100 ml	29			
Phenolphthalein Solution R1	24	BP238	100 ml	29			
Phenolphthalein-Thymol Blue Solution	12	BP239	100 ml	39			
Phenylhydrazine Hydrochloride Solution	6	BP240	100 ml	36			
Phloroglucinol Solution	12	BP241	30 ml	37			
Phosphomolybdotungstic Reagent	12	BP242	100 ml	101			
Phosphomolybdotungstic Reagent, Dilute	12	BP243	100 ml	55			
Phosphoric Acid, Dilute	12	BP244	1000 ml	40			
Phosphoric Acid, Dilute R1	12	BP245	1000 ml	40			
Phosphotungstic Acid Solution	12	BP246	100 ml	41			
Picric Acid Solution	6	BP247	100 ml	35			
Picric Acid Solution R1	6	BP248	100 ml	29			
Piperazine Dipicrate Solution	6	BP249	100 ml	86			
Potassium Antimonate(V) Solution	12	BP250	100 ml	37			
Potassium Chloride, 0.1M	24	BP251	1000 ml	53			
Potassium Chromate Solution	24	BP252	1000 ml	47			
Potassium Dichromate Solution	12	BP253	1000 ml	106			
Potassium Dichromate Solution, Dilute	12	BP254	1000 ml	85			
Potassium Dichromate Solution R1	12	BP255	1000 ml	41			
Potassium Dihydrogen Phosphate, 0.2M	12	BP256	1000 ml	41			
Potassium Ferrocyanide Solution							
See Potassium hexacyanoferrate(II) solution		BP257					
Potassium Hexacyanoferrate(II) Solution	12	BP257	100 ml	35			
Potassium Hydrogen Phthalate, 0.2M	6	BP258	1000 ml	45			
Potassium Hydroxide, 2M Alcoholic	12	BP259	100 ml	29			
Potassium Hydroxide, Ethanolic							
Specify Molarity		BP260					
Potassium Hydroxide in Alcohol (10% v/v), 0.5M	12	BP261	1000 ml	47			



Potassium Hydroxide, Methanolic				
Specify Molarity		BP262		
Potassium Hydroxide Solution, Alcoholic				
	12	BP263	100 ml	47
Potassium Hydroxide Solution R1, Alcoholic	12	BP264	1000 ml	66
Potassium Iodide and Starch Solution	12	BP265	100 ml	31
Potassium Iodide Solution	12	BP266	1000 ml	47
Potassium Iodide Solution, Dilute	12	BP267	1000 ml	43
Potassium Iodide Solution, Iodinated	12	BP268	100 ml	43
Potassium Iodide Solution, Iodinated R1	12	BP269	100 ml	43
Potassium Iodide Solution, Saturated	12	BP270	100 ml	43
Potassium Iodobismuthate Solution	6	BP271	100 ml	31
Potassium Iodobismuthate Solution, Dilute	6	BP272	500 ml	113
Potassium Iodobismuthate Solution R1	6	BP273	500 ml	213
Potassium iodobismuthate solution R2 (Stock solution)	6	BP274	100 ml	90
Potassium Iodobismuthate Solution R3	6	BP275	100 ml	129
Potassium iodobismuthate solution R4	6	BP276	100 ml	129
Potassium Iodobismuthate Solution R5	6	BP277	100 ml	129
Potassium Mercuri-iodide Solution, Alkaline	6	BP278	100 ml	136
Potassium Permanganate and Phosphoric Acid Solution	12	BP279	100 ml	46
Potassium Permanganate Solution	24	BP280	1000 ml	57
Potassium Permanganate Solution, Dilute	24	BP281	1000 ml	57
Potassium Plumbite Solution	6	BP282	100 ml	51
Potassium Pyroantimonate Solution				
See Potassium antimonate(V) solution.		BP250		
Potassium Tetraiodomercurate Solution	12	BP283	100 ml	46
Potassium tetraiodomercurate solution, alkaline (I+II)	24	BP284	100+100 ml	54
Potassium Thiocyanate Solution	24	BP285	1000 ml	46
Pyridylazonaphthol Solution	12	BP286	100 ml	35
Quinaldine Red Solution	24	BP287	100 ml	37
Quinoline Solution	12	BP288	100 ml	98
Reducing Mixture	12	BP289	55 g	72
Ruthenium Red Solution	12	BP290	100 ml	84
Salicylaldehyde azine. C <sub>14</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub> . (Mr 240.3)	12	BP291	100 ml	162
SDS-PAGE Running Buffer (10 times concentrated)	12	BP292	1000 ml	105
SDS-PAGE Sample Buffer Solution for Reducing	12	BP293	500 ml	138
Conditions (Concentrated)				
SDS-PAGE Sample Buffer (Concentrated)	12	BP294	125 ml	70
Semicarbazide Acetate Solution	12	BP295	100 ml	61
Silver Manganese Paper	12	BP296	pack of 50	134

Silver Nitrate Reagent	24	BP297	100 ml	92
Silver Nitrate Solution in Pyridine	12	BP298	100 ml	196
Silver Nitrate Solution R1	24	BP299	1000 ml	97
Silver Nitrate Solution R2	24	BP300	1000 ml	80
Sodium Carbonate Solution	24	BP301	1000 ml	48
Sodium Carbonate Solution, Dilute	24	BP302	1000 ml	48
Sodium Carbonate Solution R1	24	BP303	1000 ml	48
Sodium Carbonate Solution R2	24	BP304	1000 ml	48
Sodium Chloride Solution	24	BP305	1000 ml	43
Sodium Hydrogen Carbonate Solution	24	BP306	1000 ml	43
Sodium Hydroxide, Ethanolic				
Specify Molarity		BP307		
Sodium Hydroxide, Methanolic				
Specify Molarity		BP308		
Sodium Hydroxide Solution	24	BP309	1000 ml	54
Sodium Hydroxide Solution, Carbonate-free	24	BP310	1000 ml	77
Sodium Hydroxide Solution, Dilute	24	BP311	1000 ml	39
Sodium Hydroxide Solution, Methanolic	24	BP312	100 ml	54
Sodium Hydroxide Solution R1, Methanolic	24	BP313	100 ml	54
Sodium Hydroxide Solution, Strong	12	BP314	1000 ml	81
Sodium Iodobismuthate Solution (Solution A)	12	BP315	100 ml	56
Sodium Molybdotungstophosphate Solution	12	BP316	500 ml	103
Sodium Nitroprusside-Carbonate Solution	6	BP317	100 ml	42
Sodium Sulphide Solution	6	BP318	100 ml	47
Sodium Sulphide Solution R1	6	BP319	100 ml	80
Stannous Chloride Solution				
See Tin(II) chloride solution		BP338		
Starch Iodate Paper	12	BP320	pack of 50	134
Starch Iodide Paper	12	BP321	pack of 50	52
Starch Iodide Solution	6	BP322	100 ml	46
Starch Solution	12	BP323	100 ml	31
Sudan Red Solution	12	BP324	100 ml	37
Sudan Yellow Solution	12	BP325	100 ml	43
Sulphanilic Acid Solution	3	BP326	100 ml	52
Sulphanilic Acid Solution R1	3	BP327	100 ml	52
Sulphomolybdic Reagent R2	12	BP328	100 ml	52
Sulphomolybdic Reagent R3	12	BP329	100 ml	57
Sulphuric Acid, Dilute	24	BP330	1000 ml	40
Sulphuric Acid, Ethanolic				
Specify Molarity		BP331		
Sulphuric Acid-Formaldehyde Reagent	6	BP332	100 ml	46

Sulphuric Acid, Methanolic				
Specify Molarity		BP333		
Tetramethyldiaminodiphenylmethane reagent	6	BP334	100 ml	156
Thioacetamide Solution	12	BP335	1000 ml	133
Thymol Blue Solution	24	BP336	100 ml	29
Thymolphthalein Solution	24	BP337	100 ml	29
Tin(II) Chloride Solution	12	BP338	100 ml	42
Tin(II) Chloride Solution AsT	12	BP339	100 ml	76
Titan Yellow Paper	12	BP340	pack of 50	134
Titan Yellow Solution	12	BP341	100 ml	29
Titanium(III) Chloride–Sulphuric Acid Reagent	6	BP342	100 ml	42
Titanium Trichloride–Sulphuric Acid Reagent				
See Titanium(III) chloride–sulphuric acid reagent		BP342		
TLC Performance Test Solution	6	BP343	10 ml	46
o-Tolidine Solution	6	BP344	500 ml	57
Trichloroacetic Acid Solution	12	BP345	1000 ml	61
Triphenyltetrazolium Chloride Solution	12	BP346	100 ml	52
Tris(hydroxymethyl)methylamine Solution	4	BP347	100 ml	57
Tris(hydroxymethyl)methylamine Solution, Methanolic	4	BP348	1000 ml	83
Vanillin Solution, Phosphoric	12	BP349	100 ml	54
Water	12	BP350	5000 ml	69
Water, Ammonia-free	12	BP351	1000 ml	42
Water, Ammonium-free				
See Water, ammonia-free		BP351		
Water, Carbon Dioxide-free	12	BP352	1000 ml	42
Water for Chromatography	12	BP353	1000 ml	44
Water, Nitrate-free	12	BP354	1000 ml	42
Water, Particle-free	12	BP355	1000 ml	42
Xanthyrol Reagent (without HCl)	12	BP356	100 ml	48
Xanthyrol Solution	12	BP357	100 ml	48
Xylenol Orange Solution	6	BP358	100 ml	29
Xylenol Orange Triturate	12	BP359	50 ml	58
Zinc Acetate Solution	12	BP360	1000 ml	101
Zinc, Activated	12	BP361	10 g	171
Zinc Chloride–Formic Acid Solution	24	BP362	1000 ml	109
Zinc Chloride Solution, Iodinated	12	BP363	1000 ml	217
Zinc Iodide and Starch Solution	12	BP364	100 ml	67
Zirconyl Nitrate Solution	24	BP365	100 ml	53

# Appendix I B. Volumetric reagents and solutions

## Primary standards

The following materials, after drying under the specified conditions, are recommended for use as primary standards in the standardisation of volumetric solutions.

Description	Validity	Ref	Volume	msr	Price
Benzoic Acid	36	BP644	100	g	46
Potassium Bromate	36	BP645	50	g	46
Potassium Dichromate	36	BP646	100	g	46
Potassium Hydrogen Phthalate	36	BP647	50	g	46
Potassium Iodate	36	BP648	50	g	46
Sodium Carbonate, Anhydrous	36	BP649	50	g	46
Sodium Chloride	36	BP650	250	g	46
Sulphanilic Acid	36	BP651	100	g	46
Zinc	36	BP652	100	g	46

## Volumetric solutions

Volumetric solutions are prepared according to the usual chemical analytical methods. The accuracy of the apparatus used is verified to ensure that it is appropriate for the intended use.

The concentration of volumetric solutions is indicated in terms of molarity (M). The molarity of a solution is the number of moles of substance contained in 1000 ml of the solution. A solution that contains x moles of substance per litre is said to be xM.

Volumetric solutions do not differ from the prescribed strength by more than 10%. The molarity of the volumetric solutions is determined by an appropriate number of titrations. The repeatability does not exceed 0.2% (relative standard deviation).

Description	Validity	Ref	Volume	msr	Price
Acetic Acid 0.1M	24	BP653	1000	ml	35
Ammonium and cerium nitrate 0.1 M	24	BP654	1000	ml	119
Ammonium and cerium nitrate 0.01 M	12	BP655	1000	ml	69
Ammonium and cerium sulphate 0.1M	12	BP656	1000	ml	198
Ammonium and cerium sulphate 0.01M	12	BP657	1000	ml	69
Ammonium Iron(II) Sulphate	12	BP658	1000	ml	31
Ammonium Iron(III) Sulphate	12	BP659	1000	ml	31
Ammonium thiocyanate 0.1M	24	BP660	1000	ml	35
Barium chloride 0.1M	12	BP661	1000	ml	40
Barium perchlorate 0.05M	12	BP662	1000	ml	47
Barium perchlorate 0.025M	12	BP663	1000	ml	45
Benzethonium chloride 0.004 M	24	BP664	1000	ml	35
Bromine 0.05M	12	BP665	1000	ml	37
Cerium (IV) sulphate 0.1 M	24	BP666	1000	ml	96
Copper sulphate 0.02M	12	BP667	1000	ml	37

Disodium edetate 0.05M	24	BP668	1000	ml	29
Disodium edetate 0.02M	24	BP669	1000	ml	29
Disodium edetate 0.01M	24	BP670	1000	ml	29
Hydrochloric acid 6M	24	BP671	1000	ml	30
Hydrochloric acid 3M	24	BP672	1000	ml	30
Hydrochloric acid 2M	24	BP673	1000	ml	30
Hydrochloric acid 1M	24	BP674	1000	ml	26
Hydrochloric acid 0.1M	24	BP675	1000	ml	26
Iodine 0.5M	12	BP676	1000	ml	179
Iodine 0.05M	12	BP677	1000	ml	66
Iodine 0.01M	12	BP678	1000	ml	46
Iron(II) Sulphate 0.1M	12	BP679	1000	ml	35
Lead nitrate 0.05M	24	BP680	1000	ml	31
Lead nitrate 0.1M	24	BP681	1000	ml	37
Magnesium chloride 0.1M	24	BP682	1000	ml	61
Magnesium Sulphate 0.05M	24	BP683	1000	ml	51
Nitric acid 1M	24	BP684	1000	ml	35
Perchloric acid 0.1M	12	BP685	1000	ml	113
Perchloric acid 0.05M	12	BP686	1000	ml	97
Potassium bromate 0.033M	12	BP687	1000	ml	58
Potassium bromate 0.02M	12	BP688	1000	ml	63
Potassium bromate 0.0167M	12	BP689	1000	ml	63
Potassium bromate 0.0083M	12	BP690	1000	ml	63
Potassium dichromate 0.0167M	24	BP691	1000	ml	40
Potassium Hydroxide 0.1M	24	BP692	1000	ml	39
Potassium Hydroxide 1M	24	BP693	1000	ml	42
Potassium Hydroxide alcoholic 0.5M	12	BP694	1000	ml	51
Potassium Hydroxide alcoholic 0.1M	12	BP695	1000	ml	51
Potassium Hydroxide alcoholic 0.01M	12	BP696	1000	ml	51
Potassium Hydroxide in alcohol (60% v/v) 0.5M	12	BP697	1000	ml	55
Potassium Hydroxide in alcohol (90% v/v) 1M	12	BP698	1000	ml	57
Potassium iodate 0.05M	12	BP699	1000	ml	44
Potassium iodide 0.001M	12	BP700	1000	ml	39
Potassium permanganate 0.02M	24	BP701	1000	ml	29
Silver nitrate 0.1M	24	BP702	1000	ml	121
Silver nitrate 0.001M	24	BP703	1000	ml	59
Sodium arsenite 0.1M	12	BP704	500	ml	64
Sodium hydroxide 1M	24	BP705	1000	ml	20
Sodium hydroxide 0.1M	24	BP706	1000	ml	20
Sodium hydroxide, ethanolic 0.1M	12	BP707	1000	ml	62
Sodium methoxide 0.1M	12	BP708	1000	ml	134
Sodium nitrite 0.1M	6	BP709	1000	ml	40
Sodium thiosulphate 0.1M	24	BP710	1000	ml	24
Sulphuric acid 0.5M	24	BP711	1000	ml	24
Sulphuric acid 0.05M	24	BP712	1000	ml	24
Tetrabutylammonium hydroxide 0.1M	12	BP713	1000	ml	209
Tetrabutylammonium hydroxide in 2-propanol, 0.1M	12	BP714	1000	ml	197
Tetrabutylammonium Iodide 0.01M	12	BP715	1000	ml	175
Zinc chloride 0.05M	24	BP716	1000	ml	50
Zinc sulphate 0.1M	24	BP717	1000	ml	43

## Appendix I C. Standard solutions

The following solutions are used as reference standards in limit tests

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetaldehyde Standard Solution (100 ppm C <sub>2</sub> H <sub>4</sub> O)	6	BP366	500	ml	56				
Acetaldehyde Standard Solution (100 ppm C <sub>2</sub> H <sub>4</sub> O) R1	6	BP367	500	ml	56				
Aluminium Standard Solution (200 ppm Al)	12	BP368	100	ml	43				
Aluminium Standard Solution (100 ppm Al)	12	BP369	100	ml	43				
Aluminium Standard Solution (10 ppm Al)	12	BP370	100	ml	43				
Aluminium Standard Solution (2 ppm Al)	6	BP371	100	ml	43				
Ammonium Standard Solution (100 ppm NH <sub>4</sub> )	12	BP372	100	ml	43				
Ammonium Standard Solution (2.5 ppm NH <sub>4</sub> )	6	BP373	100	ml	43				
Ammonium Standard Solution (1 ppm NH <sub>4</sub> )	6	BP374	100	ml	43				
Antimony Standard Solution (1 ppm Sb)	6	BP375	100	ml	43				
Antimony Standard Solution (100 ppm Sb)	12	BP376	100	ml	43	BP376a	1000	ml	57
Arsenic Standard Solution (10 ppm As)	12	BP377	100	ml	43				
Arsenic Standard Solution (1 ppm As)	6	BP378	100	ml	43				
Arsenic Standard Solution (0.1 ppm As)	6	BP379	100	ml	43				
Barium Standard Solution (0.1% Ba)	24	BP380	100	ml	43	BP380a	1000	ml	57
Barium Standard Solution (50 ppm Ba)	12	BP381	100	ml	43				
Bismuth Standard Solution (100 ppm Bi)	12	BP382	100	ml	43				
Cadmium Standard Solution (0.1% Cd)	24	BP383	100	ml	43				
Cadmium Standard Solution (10 ppm Cd)	12	BP384	100	ml	43				
Calcium Standard Solution (400 ppm Ca)	12	BP385	100	ml	43				
Calcium Standard Solution (100 ppm Ca)	12	BP386	100	ml	43				
Calcium Standard Solution (100 ppm Ca), Alcoholic	12	BP387	100	ml	50	BP387a	1000	ml	83
Calcium Standard Solution (100 ppm Ca) R1	12	BP388	100	ml	43				
Calcium Standard Solution (10 ppm Ca)	12	BP389	100	ml	43				
Chloride Standard Solution (50 ppm Cl)	12	BP390	100	ml	43				
Chloride Standard Solution (8 ppm Cl)	6	BP391	100	ml	43				
Chloride Standard Solution (5 ppm Cl)	6	BP392	100	ml	43				
Chromium Standard Solution (0.1% Cr)	24	BP393	100	ml	43	BP393a	1000	ml	57
Chromium Standard Solution (100 ppm Cr)	12	BP394	100	ml	43	BP394a	1000	ml	57
Chromium Standard Solution (0.1 ppm Cr)	6	BP395	100	ml	43	BP395a	1000	ml	57
Cobalt Standard Solution (100 ppm Co)	12	BP396	100	ml	43	BP396a	1000	ml	57
Copper Standard Solution (0.1% Cu)	24	BP397	100	ml	43				
Copper Standard Solution (10 ppm Cu)	12	BP398	100	ml	43				
Copper Standard Solution (0.1 ppm Cu)	6	BP399	100	ml	43				

Ferricyanide Standard Solution (50 ppm Fe(CN) <sub>6</sub> )	12	BP400	100 ml	43			
Ferrocyanide Standard Solution (100 ppm Fe(CN) <sub>6</sub> )	12	BP401	100 ml	43			
Fluoride Standard Solution (10 ppm F)	12	BP402	100 ml	43			
Fluoride Standard Solution (10 ppm F)	6	BP403	100 ml	43			
Formaldehyde Standard Solution (5 ppm CH <sub>2</sub> O)	6	BP404	100 ml	43			
Germanium Standard Solution (100 ppm Ge)	12	BP405	100 ml	46	BP405a	1000 ml	68
Glucose Standard Solution	6	BP406	100 ml	43			
Glyoxal Standard Solution (20 ppm C <sub>2</sub> H <sub>2</sub> O <sub>2</sub> )	6	BP407	100 ml	43			
Iodide Standard Solution (20 ppm I)	12	BP408	100 ml	43			
Iodide Standard Solution (10 ppm I)	12	BP409	100 ml	43			
Iron Standard Solution (0.1% Fe)	24	BP410	100 ml	43			
Iron Standard Solution (250 ppm Fe)	12	BP411	100 ml	43			
Iron Standard Solution (20 ppm Fe)	12	BP412	100 ml	43			
Iron Standard Solution (10 ppm Fe)	12	BP413	100 ml	43			
Iron Standard Solution (8 ppm Fe)	6	BP414	100 ml	43			
Iron Standard Solution (2 ppm Fe)	6	BP415	100 ml	43			
Iron Standard Solution (1 ppm Fe)	6	BP416	100 ml	43			
Lead Standard Solution (0.1% Pb)	24	BP417	100 ml	43			
Lead Standard Solution(0.1% Pb) R1	24	BP418	100 ml	43	BP418a	250 ml	50
Lead Standard Solution (100 ppm Pb)	12	BP419	100 ml	43			
Lead Standard Solution (20 ppm Pb)	12	BP420	100 ml	43			
Lead Standard Solution (10 ppm Pb)	12	BP421	100 ml	43			
Lead Standard Solution (10 ppm Pb) R1	12	BP422	100 ml	43			
Lead Standard Solution (10 ppm Pb) R2	12	BP423	100 ml	43			
Lead Standard Solution (2 ppm Pb)	6	BP424	100 ml	43			
Lead Standard Solution (1 ppm Pb)	6	BP425	100 ml	43			
Lead Standard Solution (0.5 ppm Pb)	6	BP426	100 ml	43			
Lead Standard Solution (0.1 ppm Pb)	6	BP427	100 ml	43			
Lithium Standard Solution (100 ppm Li)	12	BP428	100 ml	43			
Magnesium Standard Solution (0.1% Mg)	24	BP429	100 ml	43			
Magnesium Standard Solution (100 ppm Mg)	12	BP430	100 ml	43			
Magnesium Standard Solution (10 ppm Mg)	12	BP431	100 ml	43			
Magnesium Standard Solution (10 ppm Mg) R1	12	BP432	100 ml	43			
Manganese Standard Solution (100 ppm Mn)	12	BP433	100 ml	43			
Mercury Standard Solution (1000 ppm Hg)	24	BP434	100 ml	43			
Mercury Standard Solution (100 ppm Hg)	12	BP435	100 ml	43			
Mercury Standard Solution (10 ppm Hg)	12	BP436	100 ml	43			
Mercury Standard Solution (5 ppm Hg)	12	BP437	100 ml	43			
Nickel Standard Solution (10 ppm Ni)	12	BP438	100 ml	43			



Nickel Standard Solution (0.2 ppm Ni)	6	BP439	100 ml	43		
Nickel Standard Solution (0.1 ppm Ni)	6	BP440	100 ml	43		
Nitrate Standard Solution (100 ppm NO <sub>3</sub> )	12	BP441	100 ml	43		
Nitrate Standard Solution (10 ppm NO <sub>3</sub> )	12	BP442	100 ml	43		
Nitrate Standard Solution (2 ppm NO <sub>3</sub> )	6	BP443	100 ml	43		
Nitrite Standard Solution (20 ppm NO <sub>2</sub> )	6	BP444	100 ml	43		
Palladium Standard Solution (500 ppm Pd)	12	BP445	100 ml	79		
Palladium Standard Solution (20 ppm Pd)	12	BP446	100 ml	46		
Palladium Standard Solution (0.5 ppm Pd)	6	BP447	100 ml	43		
Phosphate Standard Solution (200 ppm PO <sub>4</sub> )	12	BP448	100 ml	43		
Phosphate Standard Solution (100 ppm PO <sub>4</sub> )	12	BP449	100 ml	43		
Phosphate Standard Solution (5 ppm PO <sub>4</sub> )	6	BP450	100 ml	43		
Platinum Standard Solution (30 ppm Pt)	12	BP451	100 ml	46		
Potassium Standard Solution (0.2 % K)	24	BP452	100 ml	43		
Potassium Standard Solution (600 ppm K)	12	BP453	100 ml	43		
Potassium Standard Solution (100 ppm K)	12	BP454	100 ml	43		
Potassium Standard Solution (20 ppm K)	12	BP455	100 ml	43		
Selenium Standard Solution (100 ppm Se)	12	BP456	100 ml	43		
Selenium Standard Solution (1 ppm Se)	6	BP457	100 ml	43		
Silver Standard Solution (5 ppm Ag)	6	BP458	100 ml	43		
Sodium Standard Solution (200 ppm Na)	12	BP459	100 ml	43		
Sodium Standard Solution (50 ppm Na)	12	BP460	100 ml	43		
Strontium Standard Solution (1.0 per cent Sr)	24	BP461	100 ml	50		
Sulphate Standard Solution (100 ppm SO <sub>4</sub> )	12	BP462	100 ml	43		
Sulphate Standard Solution (10 ppm SO <sub>4</sub> )	12	BP463	100 ml	43		
Sulphate Standard Solution (10 ppm SO <sub>4</sub> ) R1	12	BP464	100 ml	43		
Sulphite Standard Solution (80 ppm SO <sub>2</sub> )	6	BP465	100 ml	43		
Thallium Standard Solution (10 ppm Tl)	12	BP466	100 ml	43		
Tin Standard Solution (0.1 ppm Sn)	6	BP467	100 ml	43		
Titanium Standard Solution (100 ppm Ti)	12	BP468	100 ml	43		
Vanadium Standard Solution (1 g/l V)	24	BP469	100 ml	43		
Zinc Standard Solution (5 mg/ml Zn)	24	BP470	100 ml	43	BP470a	500 ml 50
Zinc Standard Solution (100 ppm Zn)	12	BP471	100 ml	43		
Zinc Standard Solution (25 ppm Zn)	12	BP472	100 ml	43		
Zinc Standard Solution (10 ppm Zn)	12	BP473	100 ml	43		
Zinc Standard Solution (5 ppm Zn)	6	BP474	100 ml	43		
Zirconium Standard Solution (1 g/l Zr)	6	BP475	100 ml	43		

## Appendix I D. Buffer solutions

Buffer solutions are prepared using carbon dioxide-free water.

Description	Validity	Ref	Volume	msr	Price
Acetate Buffer pH 2.45	12	BP476	1000	ml	51
Acetate Buffer pH 2.8	12	BP477	1000	ml	51
Acetate Buffer pH 3.4	12	BP478	1000	ml	51
Acetate Buffer pH 3.5	12	BP479	1000	ml	51
Acetate Buffer pH 3.7	12	BP480	1000	ml	51
Acetate Buffer pH 4.4	12	BP481	1000	ml	51
Acetate Buffer pH 4.6	12	BP482	1000	ml	51
Acetate Buffer pH 5.0	12	BP483	1000	ml	51
Acetate Buffer pH 6.0	12	BP484	1000	ml	51
Acetate Buffer Solution pH 4.5	12	BP485	1000	ml	51
Acetate Buffer Solution pH 4.7	12	BP486	1000	ml	55
Acetate Buffer Solution pH 5.0	12	BP487	1000	ml	51
Acetate–Edetate Buffer Solution pH 5.5	12	BP488	1000	ml	51
Acetone Solution, Buffered	24	BP489	1000	ml	51
Ammonia Buffer pH 10.0	12	BP490	1000	ml	51
Ammonia Buffer pH 10.9	12	BP491	1000	ml	51
Ammonia Buffer pH 10.9, Dilute	12	BP492	1000	ml	51
Ammonium Carbonate Buffer Solution pH 10.3, 0.1M	12	BP493	1000	ml	51
Ammonium Chloride Buffer Solution pH 9.5	12	BP494	1000	ml	51
Ammonium Chloride Buffer Solution pH 10.4	12	BP495	1000	ml	51
Borate Buffer pH 7.5	12	BP496	1000	ml	51
Borate Buffer pH 8.0	12	BP497	1000	ml	51
Borate Buffer pH 9.0	12	BP498	1000	ml	51
Borate Buffer pH 9.6	12	BP499	1000	ml	51
Borate Buffer Solution pH 8.0, 0.0015M	12	BP500	1000	ml	51
Borate Buffer Solution pH 10.4	12	BP501	1000	ml	51
Boric Buffer pH 9.0	12	BP502	1000	ml	51
Buffer (Acetate) Solution pH 5.0	12	BP503	1000	ml	51
Buffer (HEPES) Solution pH 7.5	12	BP504	1000	ml	51
Buffer (Phosphate) Solution pH 9.0	12	BP505	1000	ml	51
Buffer Solution pH 2.0	12	BP506	1000	ml	51
Buffer Solution pH 2.2	12	BP507	1000	ml	51
Buffer Solution pH 2.5	12	BP508	1000	ml	51
Buffer Solution pH 2.5 R1	12	BP509	1000	ml	51
Buffer Solution pH 3.0	12	BP510	1000	ml	51
Buffer Solution pH 3.7	12	BP511	1000	ml	51
Buffer Solution pH 5.2	12	BP512	1000	ml	51
Buffer Solution pH 5.5	12	BP513	1000	ml	51
Buffer Solution pH 6.5	12	BP514	1000	ml	51
Buffer Solution pH 6.6	12	BP515	1000	ml	51
Buffer Solution pH 7.0	12	BP516	1000	ml	51

Buffer Solution pH 7.4	12	BP517	1000	ml	51
Buffer Solution pH 8.0 R1	12	BP518	1000	ml	51
Buffered Salt Solution pH 7.2	12	BP519	1000	ml	57
Carbonate Buffer pH 9.7	12	BP520	1000	ml	51
Chloride Buffer pH 2.0, 0.1M	12	BP521	1000	ml	51
Citrate Buffer Solution pH 5.0	12	BP522	1000	ml	51
Citrate Buffer Solution pH 3.0, 0.25M	12	BP523	1000	ml	51
Citro-phosphate Buffer pH 4.5	12	BP524	1000	ml	51
Citro-phosphate Buffer pH 5.0	12	BP525	1000	ml	51
Citro-phosphate Buffer pH 6.0	12	BP526	1000	ml	51
Citro-phosphate Buffer pH 6.5	12	BP527	1000	ml	51
Citro-phosphate Buffer pH 6.8	12	BP528	1000	ml	51
Citro-phosphate Buffer pH 7.0	12	BP529	1000	ml	51
Citro-phosphate Buffer pH 7.2	12	BP530	1000	ml	51
Citro-phosphate Buffer pH 7.6	12	BP531	1000	ml	51
Copper Sulphate Solution pH 4.0, Buffered	12	BP532	1000	ml	51
Copper Sulphate Solution pH 5.2, Buffered	12	BP533	1000	ml	51
Diethanolamine Buffer Solution pH 10.0	12	BP534	1000	ml	51
Diethylammonium Phosphate Buffer Solution pH 6.0	12	BP535	1000	ml	57
Glycine Buffer pH 2.9	12	BP536	1000	ml	51
Glycine Buffer pH 11.3	12	BP537	1000	ml	51
Glycine Buffer Solution	12	BP538	1000	ml	62
Imidazole Buffer Solution pH 6.5	12	BP539	1000	ml	57
Imidazole Buffer Solution pH 7.3	12	BP540	1000	ml	57
Maleate Buffer Solution pH 7.0	12	BP541	1000	ml	51
Phosphate Buffer pH 5.8	12	BP542	1000	ml	51
Phosphate Buffer pH 6.0	12	BP543	1000	ml	51
Phosphate Buffer pH 6.2	12	BP544	1000	ml	51
Phosphate Buffer pH 6.4	12	BP545	1000	ml	51
Phosphate Buffer pH 6.8	12	BP546	1000	ml	51
Phosphate Buffer pH 7.0	12	BP547	1000	ml	51
Phosphate Buffer pH 7.2	12	BP548	1000	ml	51
Phosphate Buffer pH 7.4	12	BP549	1000	ml	51
Phosphate Buffer pH 7.6	12	BP550	1000	ml	51
Phosphate Buffer pH 7.8	12	BP551	1000	ml	51
Phosphate Buffer pH 8.0	12	BP552	1000	ml	51
Phosphate Buffer pH 3.0	12	BP553	1000	ml	51
Phosphate Buffer pH 3.5	12	BP554	1000	ml	51
Phosphate Buffer pH 4.0	12	BP555	1000	ml	51
Phosphate Buffer pH 4.0, Mixed	12	BP556	1000	ml	51
Phosphate Buffer pH 4.75	12	BP557	1000	ml	51
Phosphate Buffer pH 4.9	12	BP558	1000	ml	51
Phosphate Buffer pH 5.4, Mixed	12	BP559	1000	ml	51
Phosphate Buffer pH 6.8, Mixed	12	BP560	1000	ml	51
Phosphate Buffer pH 6.8, 0.2M Mixed	12	BP561	1000	ml	51
Phosphate Buffer pH 7.0, Mixed	12	BP562	1000	ml	51
Phosphate Buffer pH 7.0, 0.067M Mixed	12	BP563	1000	ml	51

Phosphate Buffer pH 7.0, 0.1M Mixed	12	BP564	1000	ml	51
Phosphate Buffer pH 7.5, 0.2M	12	BP565	1000	ml	51
Phosphate Buffer pH 10, Mixed	12	BP566	1000	ml	51
Phosphate Buffer, 0.025M Standard	12	BP567	1000	ml	51
Phosphate Buffer Solution pH 2.0	12	BP568	1000	ml	51
Phosphate Buffer Solution pH 2.8	12	BP569	1000	ml	51
Phosphate Buffer Solution pH 3.0	12	BP570	1000	ml	51
Phosphate Buffer Solution pH 3.0, 0.1M	12	BP571	1000	ml	51
Phosphate Buffer Solution pH 3.0 R1	12	BP572	1000	ml	51
Phosphate Buffer Solution pH 3.2	12	BP573	1000	ml	51
Phosphate Buffer Solution pH 3.2 R1	12	BP574	1000	ml	51
Phosphate Buffer Solution pH 3.5	12	BP575	1000	ml	51
Phosphate Buffer Solution pH 4.5, 0.05M	12	BP576	1000	ml	51
Phosphate Buffer Solution pH 5.0	12	BP577	1000	ml	51
Phosphate Buffer Solution pH 5.4, 0.067M	12	BP578	1000	ml	51
Phosphate Buffer Solution pH 5.5	12	BP579	1000	ml	51
Phosphate Buffer Solution pH 5.6	12	BP580	1000	ml	51
Phosphate Buffer Solution pH 5.8	12	BP581	1000	ml	51
Phosphate Buffer Solution pH 6.0 R1	12	BP582	1000	ml	51
Phosphate Buffer Solution pH 6.0 R2	12	BP583	1000	ml	51
Phosphate Buffer Solution pH 6.3, 0.1M	12	BP584	1000	ml	51
Phosphate Buffer Solution pH 6.4	12	BP585	1000	ml	51
Phosphate Buffer Solution pH 6.5	12	BP586	1000	ml	51
Phosphate Buffer Solution pH 6.5, 0.1M	12	BP587	1000	ml	51
Phosphate Buffer Solution pH 6.8	12	BP588	1000	ml	51
Phosphate Buffer Solution pH 7.0	12	BP589	1000	ml	51
Phosphate Buffer Solution pH 7.0 R1	12	BP590	1000	ml	51
Phosphate Buffer Solution pH 7.0 R2	12	BP591	1000	ml	51
Phosphate Buffer Solution pH 7.0 R3	12	BP592	1000	ml	51
Phosphate Buffer Solution pH 7.0 R4	12	BP593	1000	ml	51
Phosphate Buffer Solution pH 7.0 R5	12	BP594	1000	ml	51
Phosphate Buffer Solution pH 7.0, 0.025M	12	BP595	1000	ml	51
Phosphate Buffer Solution pH 7.0, 0.03M	12	BP596	1000	ml	51
Phosphate Buffer Solution pH 7.0, 0.05M	12	BP597	1000	ml	51
Phosphate Buffer Solution pH 7.0, 0.063M	12	BP598	1000	ml	51
Phosphate Buffer Solution pH 7.2	12	BP599	1000	ml	51
Phosphate Buffer Solution pH 7.4	12	BP600	1000	ml	51
Phosphate Buffer Solution pH 7.5, 0.33M	12	BP601	1000	ml	51
Phosphate Buffer Solution pH 8.0, 0.02M	12	BP602	1000	ml	51
Phosphate Buffer Solution pH 8.0, 0.1M	12	BP603	1000	ml	51
Phosphate Buffer Solution pH 8.0, 1M	12	BP604	1000	ml	51
Phosphate Buffer Solution pH 9.0	12	BP605	1000	ml	51
Phosphate–Citrate Buffer Solution pH 5.5	12	BP606	1000	ml	51
Phthalate Buffer pH 3.6	12	BP607	1000	ml	51
Phthalate Buffer Solution pH 4.4	12	BP608	1000	ml	51
Phthalate Buffer Solution pH 6.4, 0.5M	12	BP609	1000	ml	51
Saline pH 6.4, Phosphate-buffered	12	BP610	1000	ml	51

Saline pH 6.8, Phosphate-buffered	12	BP611	1000	ml	51
Saline pH 7.2, Phosphate-albumin Buffered	12	BP612	1000	ml	116
Saline pH 7.2 R1, Phosphate-albumin Buffered	12	BP613	1000	ml	118
Saline pH 7.4, Phosphate-buffered	12	BP614	1000	ml	51
Sodium Acetate Buffer Solution pH 4.5	12	BP615	1000	ml	51
Sodium Acetate Solution pH 6.0, Buffered	12	BP616	1000	ml	51
Sodium Citrate Buffer Solution pH 7.8 (0.034M Sodium Citrate, 0.101M Sodium Chloride)	12	BP617	1000	ml	51
Succinate Buffer Solution pH 4.6	12	BP618	1000	ml	57
Sulphate Buffer Solution pH 2.0	12	BP619	1000	ml	51
Tetrabutylammonium Buffer Solution pH 7.0	12	BP620	1000	ml	86
Total Ionic Strength Adjustment Buffer R1	12	BP621	1000	ml	74
Total Ionic Strength Adjustment Buffer	12	BP622	1000	ml	53
Tris-acetate Buffer Solution pH 8.	12	BP623	1000	ml	51
Tris-chloride Buffer pH 7.4	12	BP624	1000	ml	51
Tris-chloride Buffer pH 7.5	12	BP625	1000	ml	51
Tris-chloride Buffer pH 7.5 R1	12	BP626	1000	ml	51
Tris-chloride Buffer pH 8.1	12	BP627	1000	ml	51
Tris-chloride Buffer pH 8.6	12	BP628	1000	ml	51
Tris-EDTA Buffer pH 8.4	12	BP629	1000	ml	51
Tris-EDTA BSA Buffer Solution pH 8.4	12	BP630	1000	ml	130
Tris-glycine Buffer Solution pH 8.3	12	BP631	1000	ml	57
Tris-hydrochloride Buffer Solution pH 8.3	12	BP632	1000	ml	51
Tris-hydrochloride Buffer Solution pH 8.0, 1M	12	BP633	1000	ml	51
Tris-hydrochloride Buffer Solution pH 6.8, 1M	12	BP634	1000	ml	51
Tris-hydrochloride Buffer Solution pH 8.0	12	BP635	1000	ml	51
Tris-hydrochloride Buffer Solution pH 8.8, 1.5M	12	BP636	1000	ml	51
Tris(hydroxymethyl)aminomethane Buffer Solution pH 7.4	12	BP637	1000	ml	51
Tris(hydroxymethyl)aminomethane Sodium Chloride Buffer Solution pH 7.4 R1		BP638	1000	ml	51
Tris-sodium Acetate Buffer Solution pH 7.4		BP639	1000	ml	51
Tris-sodium Acetate-sodium Chloride Buffer Solution pH 7.4		BP640	1000	ml	91
Tris-sodium Acetate Buffer Solution pH 8.0		BP641	1000	ml	51
Tris-sodium Acetate-Sodium Chloride Buffer Solution pH 8.0		BP642	1000	ml	91
Phosphate Buffer Solution pH 8.5		BP643	1000	ml	51

## Appendix IV A. Clarity of Solution

Hydrazine Sulphate Solution

Hexamethylenetetramine Solution

Primary opalescent Suspension

Description	Validity	Ref	Volume	msr	Price
Acetate Buffer pH 2.45	12	BP476	1000	ml	51
Primary opalescent suspension	6	BPC001	100	ml	58
Hydrazine sulfate solution	6	BPC002	100	ml	36
Hexamethylenetetramine solution	6	BPC003	100	ml	36

## Appendix IV B. Colour of Solution

### Primary solutions

Yellow Solution

Red Solution

Blue Primary Solution

Description	Validity	Ref	Volume	msr	Price
Blue Primary Solution	24	BPCB004	100	ml	58
Red solution	24	BPCR003	100	ml	87
Yellow solution	24	BPCY002	100	ml	58

### Standard Solutions

Description	Validity	Ref	Volume	msr	Price
Standard solution B (brown)	6	BPB005	125	ml	87
Standard solution BY (brownish yellow)	6	BPBY006	125	ml	74
Standard solution GY (greenish yellow)	12	BPGY008	125	ml	74
Standard solution R (red)	6	BPR009	125	ml	87
Standard solution Y (yellow)	6	BPY007	125	ml	74
Colour Reference Solutions B: B1-B9	12	BPB105	9x100	ml	215
Colour Reference Solutions BY: BY1-BY7	12	BPBY106	7x100	ml	215
Colour Reference Solutions GY: GY1-GY7	6	BPGY108	7x100	ml	215
Colour Reference Solutions R: R1-R7	12	BPR109	100	ml	215
Colour Reference Solutions Y: Y1-Y7	12	BPY107	7x100	ml	215
Hydrochloric Acid (Dilution Matrix)	24	BPDM015	1000	ml	58

# Japanese Pharmacopoeia

## Standard Solutions for Volumetric Analysis

Standard Solutions for Volumetric Analysis are the solutions of reagent with an accurately known concentration, mainly used for the volumetric analysis. They are prepared to a specified molar concentration. A 1 molar solution is a solution which contains exactly 1 mole of a specified substance in each 1000 mL of the solution and is designated as 1 mol /L. If necessary, these solutions are diluted to other specified molar concentrations and the diluted solutions are also used as standard solutions.

Description	Validity	Ref	Volume	msr	Price
Ammonium Thiocyanate, 0.1 mol /L	12	JPH001	1000	ml	31
Ammonium Iron (III) Sulfate, 0.1 mol /L	12	JPH002	1000	ml	86
Barium chloride, 0.1 mol /L	12	JPH003	1000	ml	35
Barium Chloride, 0.02 mol /L	12	JPH004	1000	ml	41
Barium Chloride, 0.01 mol /L	12	JPH005	1000	ml	41
Barium Perchlorate, 0.005 mol/L	12	JPH006	1000	ml	43
Bismuth Nitrate, 0.01 mol/ L	12	JPH007	1000	ml	42
Bromine, 0.05 mol /L	12	JPH008	1000	ml	43
Cerium (IV) Tetraammonium Sulfate, 0.1 mol/l	12	JPH009	1000	ml	231
Disodium Dihydrogen Ethylenediamine Tetraacetate, 0.1 mol/L	24	JPH010	1000	ml	44
Disodium Dihydrogen Ethylenediamine Tetraacetate, 0.05 mol/L	24	JPH011	1000	ml	44
Disodium Dihydrogen Ethylenediamine Tetraacetate, 0.02 mol/L	24	JPH012	1000	ml	44
Hydrochloric Acid, 2 mol/l	12	JPH013	1000	ml	41
Hydrochloric Acid, 1 mol/l	24	JPH014	1000	ml	41
Hydrochloric Acid, 0.5 mol/l	24	JPH015	1000	ml	41
Hydrochloric Acid, 0.2 mol/l	24	JPH016	1000	ml	41
Iodine, 0.05 mol/l	12	JPH017	1000	ml	44
Magnesium Chloride, 0.05 mol/l	12	JPH018	1000	ml	52
Oxalic Acid, 0.05 mol/l	12	JPH019	1000	ml	41
Perchloric Acid, 0.1 mol/l	12	JPH020	1000	ml	121
Perchloric Acid-1,4-Dioxane, 0.1 mol/l	12	JPH021	1000	ml	264
Potassium Bromate, 1/60 mol/L	12	JPH022	1000	ml	58
Potassium Dichromate, 1/60 mol/L	12	JPH023	1000	ml	35
Potassium Hexacyanoferrate (III), 0.1 mol/l	12	JPH024	1000	ml	44
Potassium Hydroxide, 1 mol/L	12	JPH025	1000	ml	41
Potassium Hydroxide, 0.5 mol/L	12	JPH026	1000	ml	41
Potassium Hydroxide, 0.1 mol/L	12	JPH027	1000	ml	41
Potassium Hydroxide-Ethanol, 0.5 mol/L	12	JPH028	1000	ml	59
Potassium Iodate, 0.05 mol/L	12	JPH029	1000	ml	46
Potassium Iodate, 1/60 mol/L	12	JPH030	1000	ml	46
Potassium Iodate, 1/1200 mol/L	12	JPH031	1000	ml	46
Potassium Permanganate, 0.02 mol/L	12	JPH032	1000	ml	31
Silver Nitrate, 0.1 mol/L	24	JPH033	1000	ml	76



Sodium Acetate, 0.1 mol/L	12	JPH034	1000	ml	48
Sodium Hydroxide, 1 mol/L	12	JPH035	1000	ml	20
Sodium Hydroxide, 0.5 mol/L	12	JPH036	1000	ml	24
Sodium Hydroxide, 0.2 mol/L	12	JPH037	1000	ml	24
Sodium Hydroxide, 0.1 mol/L	12	JPH038	1000	ml	20
Sodium Lauryl Sulfate, 0.01 mol/L	12	JPH039	1000	ml	44
Sodium Methoxide, 0.1 mol/L	12	JPH040	1000	ml	141
Sodium Methoxide-1,4-Dioxane, 0.1 mol/L	12	JPH041	1000	ml	305
Sodium Nitrite, 0.1 mol/L	12	JPH042	1000	ml	35
Sodium Oxalate, 0.005 mol/L	12	JPH043	1000	ml	35
Sodium Thiosulfate, 0.1 mol/L	24	JPH044	1000	ml	24
Sulfuric Acid, 0.5 mol/L	24	JPH045	1000	ml	31
Sulfuric Acid, 0.25 mol/L	24	JPH046	1000	ml	31
Sulfuric Acid, 0.1 mol/L	24	JPH047	1000	ml	31
Sulfuric Acid, 0.05 mol/L	24	JPH048	1000	ml	31
Titanium (III) Chloride, 0.1 mol/L	12	JPH049	100	ml	112
Zinc, 0.1 mol/L	12	JPH050	1000	ml	41
Zinc Acetate, 0.05 mol/L	12	JPH051	1000	ml	41
Zinc Acetate, 0.02 mol/L	12	JPH052	1000	ml	41
Zinc Sulfate, 0.1 mol/L	12	JPH053	1000	ml	43

## Standard Solutions

Standard Solutions are used as the standard for the comparison in a text of the Pharmacopoeia.

Description	Validity	Ref	Volume	msr	Price
Borate pH Standard Solution	12	JPH054	200	ml	52
Calcium Hydroxide pH Standard Solution	12	JPH055	200	ml	52
Carbonate pH Standard Solution	12	JPH056	200	ml	52
Oxalate pH Standard Solution	12	JPH057	200	ml	52
pH Standard Solution, Borate	12	JPH058	200	ml	52
pH Standard Solution, Calcium Hydroxide	12	JPH059	200	ml	52
pH Standard Solution, Carbonate	12	JPH060	200	ml	52
pH Standard Solution, Oxalate	12	JPH061	200	ml	52
pH Standard Solution, Phosphate	12	JPH062	200	ml	52
pH Standard Solution, Phthalate	12	JPH063	200	ml	52
Phosphate pH Standard Solution	12	JPH064	200	ml	52
Phthalate pH Standard Solution	12	JPH065	200	ml	52
Standard Aluminum Stock Solution	12	JPH066	100	ml	43
Standard Ammonium Solution	12	JPH067	100	ml	43
Standard Arsenic Stock Solution	12	JPH068	100	ml	43
Standard Boron Solution	12	JPH069	100	ml	43
Standard Cadmium Stock Solution	12	JPH070	100	ml	43
Standard Calcium Solution	12	JPH071	100	ml	43

Standard Calcium Solution for Atomic Absorption Spectrophotometry	12	JPH072	100	ml	43
Standard Copper Stock Solution	12	JPH073	100	ml	43
Standard Cyanide Stock Solution	12	JPH074	100	ml	48
Standard Fluorine Solution	12	JPH075	100	ml	43
Standard Gold Stock Solution	12	JPH076	100	ml	70
Standard Gold Solution for Atomic Absorption Spectrophotometry	12	JPH077	100	ml	43
Standard Iron Solution	12	JPH078	100	ml	43
Standard Lead Stock Solution	12	JPH079	100	ml	43
Standard Mercury Solution (100 times concentrated)	12	JPH080	100	ml	43
Standard Methanol Solution	12	JPH081	100	ml	43
Standard Nickel Solution	12	JPH082	100	ml	43
Standard Nitric Acid Solution	12	JPH083	100	ml	43
Standard Phosphoric Acid Solution	12	JPH084	100	ml	43
Standard Potassium Stock Solution	12	JPH085	100	ml	43
Standard Selenium Stock Solution	12	JPH086	100	ml	43
Standard Silver Stock Solution	12	JPH087	100	ml	43
Standard Sodium Dodecylbenzene Sulfonate Solution	12	JPH088	100	ml	43
Standard Sodium Stock Solution	12	JPH089	100	ml	43
Standard Tin Solution (100 times concentrated)	12	JPH090	100	ml	43
Standard Zinc Stock Solution	12	JPH091	100	ml	43
Standard Zinc Solution for Atomic Absorption Spectrophotometry	12	JPH092	100	ml	43

## Matching Fluids for Color

Matching Fluids for Color are used as the reference for the comparison of color in a text of the Pharmacopoeia. When the color of the solution is compared with Matching Fluids for Color, unless otherwise specified, transfer both solutions and liquids to Nessler tubes and view transversely against a white background.

Description	Validity	Bottle	Ref	Volume	msr	Price
Cobalt (II) Chloride Colorimetric Stock Solution	24	HDPE	JPH093	100	ml	79
Copper (II) Sulfate Colorimetric Stock Solution	24	HDPE	JPH094	100	ml	53
Iron (III) Chloride Colorimetric Stock Solution	24	HDPE	JPH095	100	ml	57
Matching Fluids for Color - kit of 20 fluids (A-T)	12	Glass	JPH096	20x10	ml	264

## Reagents, Test Solutions

Reagents are the substances used in the tests of the Pharmacopoeia

Test Solutions are the solutions prepared for use in the tests of the Pharmacopoeia.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetate buffer solution, pH 3.5	12	JPH097	100	ml	29	JPH097a	1000	ml	48
Acetate buffer solution, pH 4.5	12	JPH098	100	ml	29	JPH098a	1000	ml	48

Acetate buffer solution, pH 5.4	12	JPH099	100 ml	29	JPH099a	1000 ml	48
0.01 mol/L Acetate buffer solution, pH 5.0	12	JPH100	100 ml	29	JPH100a	1000 ml	48
Acetate buffer solution, pH 5.5	12	JPH101	100 ml	29	JPH101a	1000 ml	48
Acetic acid-ammonium acetate buffer solution, pH 3.0	12	JPH102	100 ml	29	JPH102a	1000 ml	48
Acetic acid-ammonium acetate buffer solution, pH 4.5	12	JPH103	100 ml	29	JPH103a	1000 ml	48
Acetic acid-ammonium acetate buffer solution, pH 4.8	12	JPH104	100 ml	29	JPH104a	1000 ml	48
Acetic acid, dilute	24	JPH105	100 ml	24	JPH105a	1000 ml	39
Acetic acid-potassium acetate buffer solution, pH 4.3	12	JPH106	100 ml	29	JPH106a	1000 ml	48
Acetic acid-sodium acetate buffer solution, 0.05 mol/L, pH 4.0	12	JPH107	100 ml	29	JPH107a	1000 ml	48
0.05 mol/L Acetic acid-sodium acetate buffer solution, pH 4.0	12	JPH108	100 ml	29	JPH108a	1000 ml	48
Acetic acid-sodium acetate buffer solution, pH 4.5	12	JPH109	100 ml	29	JPH109a	1000 ml	48
Acetic acid-sodium acetate buffer solution, pH 4.5,	12	JPH110	100 ml	29	JPH110a	1000 ml	48
for iron limit test							
Acetic acid-sodium acetate buffer solution, pH 4.7	12	JPH111	100 ml	29	JPH111a	1000 ml	48
Acetic acid-sodium acetate buffer solution, pH 5.0	12	JPH112	100 ml	29	JPH112a	1000 ml	48
Acetic acid-sodium acetate buffer solution, pH 5.5	12	JPH113	100 ml	29	JPH113a	1000 ml	48
Acetic acid-sodium acetate buffer solution, pH 5.6	12	JPH114	100 ml	29	JPH114a	1000 ml	48
1 mol/L Acetic acid-sodium acetate buffer solution, pH 5.0	12	JPH115	100 ml	29	JPH115a	1000 ml	48
0.1 mol/L Acetic acid-sodium acetate buffer solution, pH 4.0	12	JPH116	100 ml	29	JPH116a	1000 ml	48
0.05 mol/L Acetic acid-sodium acetate buffer solution, pH 4.6	12	JPH117	100 ml	29	JPH117a	1000 ml	48
Acetic acid-sodium acetate TS	12	JPH118	100 ml	26	JPH118a	1000 ml	48
0.02 mol/L Acetic acid-sodium acetate TS	12	JPH119	100 ml	26	JPH119a	1000 ml	48
6 mol/L Acetic acid TS	24	JPH120	100 ml	24	JPH120a	1000 ml	43
0.25 mol/L Acetic acid TS	24	JPH121	100 ml	24	JPH121a	1000 ml	43
Acetic acid (100)-sulfuric acid TS	24	JPH122	100 ml	29	JPH122a	1000 ml	48
Acetic acid (31)	24	JPH123	100 ml	24	JPH123a	1000 ml	43
Acetic anhydride-pyridine TS	12	JPH124	100 ml	59			
Alizarin complexone TS	12	JPH125	100 ml	114			
Alizarin red S TS	12	JPH126	100 ml	37			
Alizarin yellow GG-thymolphthalein TS	12	JPH127	100 ml	37			
Alizarin yellow GG TS	12	JPH128	100 ml	35			
Alkali copper TS	12	JPH129	100 ml	53	JPH129a	1000 ml	90
Alkaline copper TS	12	JPH130	100 ml	48			
Alkaline glycerin TS	12	JPH131	100 ml	73			
Aluminon TS	12	JPH132	100 ml	26			
Aluminum (III) chloride TS	12	JPH133	100 ml	59			
4-Aminoacetophenone TS	12	JPH134	100 ml	41			
Ammonia-ammonium acetate buffer solution, pH 8.0	12	JPH135	100 ml	29	JPH135a	1000 ml	48
Ammonia-ammonium acetate buffer solution, pH 8.5	12	JPH136	100 ml	42	JPH136a	1000 ml	83

Ammonia-ammonium chloride buffer solution, pH 8.0	12	JPH137	100 ml	29	JPH137a	1000 ml	48
Ammonia-ammonium chloride buffer solution, pH 10.0	12	JPH138	100 ml	29	JPH138a	1000 ml	48
Ammonia-ammonium chloride buffer solution, pH 10.7	12	JPH139	100 ml	29	JPH139a	1000 ml	48
Ammonia-ammonium chloride buffer solution, pH 11.0	12	JPH140	100 ml	29	JPH140a	1000 ml	48
Ammonia copper TS	12	JPH141	100 ml	26			
Ammonia-ethanol TS	12	JPH142	100 ml	30			
Ammonia-saturated 1-butanol TS	12	JPH143	100 ml	52			
Ammonia TS	12	JPH144	100 ml	26	JPH144a	1000 ml	43
1 mol/L Ammonia water	12	JPH145	100 ml	26	JPH145a	1000 ml	43
13.5 mol/L Ammonia water	12	JPH146	100 ml	29			
Ammonium acetate TS	12	JPH147	100 ml	26	JPH147a	1000 ml	50
0.5 mol/L Ammonium acetate TS	12	JPH148	100 ml	24	JPH148a	1000 ml	43
Ammonium carbonate TS	12	JPH149	100 ml	30			
Ammonium chloride-ammonia TS	12	JPH150	100 ml	30	JPH150a	500 ml	44
Ammonium chloride buffer solution, pH 10	12	JPH151	100 ml	29	JPH151a	1000 ml	48
Ammonium chloride TS	24	JPH152	100 ml	30	JPH152a	1000 ml	66
0.02 mol/L Ammonium dihydrogenphosphate TS	12	JPH153	100 ml	26	JPH153a	1000 ml	43
0.05 mol/L Ammonium formate buffer solution, pH 4.0	12	JPH154	100 ml	29	JPH154a	1000 ml	48
Ammonium iron (III) sulfate TS	12	JPH155	100 ml	26			
Ammonium iron (III) sulfate TS, acidic	12	JPH156	100 ml	30			
Ammonium iron (III) sulfate TS, dilute	12	JPH157	100 ml	26			
Ammonium oxalate TS	12	JPH158	100 ml	26			
10% Ammonium peroxodisulfate TS	12	JPH159	100 ml	30			
Ammonium sulfate buffer solution	12	JPH160	100 ml	35		1000 ml	90
Ammonium thiocyanate-cobalt (II) nitrate TS	12	JPH161	100 ml	48			
Ammonium thiocyanate TS	12	JPH162	100 ml	30			
Anthrone TS	12	JPH163	100 ml	37			
Arsenic (III) trioxide TS	12	JPH164	100 ml	48			
Arsenic trioxide TS (See arsenic (III) trioxide TS)		JPH164					
Barbital buffer solution	12	JPH166	100 ml	29	JPH166a	1000 ml	48
Barium chloride TS	24	JPH167	100 ml	26			
Barium nitrate TS	12	JPH168	100 ml	25			
Bismuth nitrate TS	12	JPH169	100 ml	37			
Bismuth potassium iodide TS	12	JPH170	100 ml	81			
Bismuth subnitrate TS	12	JPH171	100 ml	61			
Borate-hydrochloric acid buffer solution, pH 9.0	12	JPH172	100 ml	29	JPH172a	1000 ml	48
Boric acid-methanol buffer solution	12	JPH173	100 ml	42			
Boric acid-potassium chloride-sodium hydroxide buffer solution, pH 9.0	12	JPH174	200 ml	43			

Boric acid-potassium chloride-sodium hydroxide buffer solution, pH 9.2	12	JPH175	200 ml	43			
Boric acid-potassium chloride-sodium hydroxide buffer solution, pH 9.6	12	JPH176	200 ml	43			
Boric acid-potassium chloride-sodium hydroxide buffer solution, pH 10.0	12	JPH177	200 ml	43			
0.2 mol/L Boric acid-0.2 mol/L potassium chloride TS for buffer solution	12	JPH178	200 ml	43	JPH178a	1000 ml	57
Bromine-acetic acid TS	3	JPH179	100 ml	44			
Bromine TS	3	JPH180	100 ml	41			
Bromocresol green-crystal violet TS	12	JPH181	100 ml	40			
Bromocresol green-methyl red TS	12	JPH182	100 ml	40	JPH182a	250 ml	66
Bromocresol green-sodium hydroxide-acetic acid-sodium acetate TS	12	JPH183	100 ml	70			
Bromocresol green-sodium hydroxide-ethanol TS	12	JPH184	100 ml	43			
Bromocresol green-sodium hydroxide TS	12	JPH185	100 ml	40	JPH185a	200 ml	48
Bromocresol green TS	24	JPH186	100 ml	25			
Bromocresol purple-dipotassium hydrogenphosphatecitric acid TS	12	JPH187	100 ml	54			
Bromocresol purple-sodium hydroxide TS	12	JPH188	100 ml	31	JPH188a	250 ml	57
Bromocresol purple TS	24	JPH189	100 ml	28			
Bromophenol blue-potassium biphthalate TS	12	JPH190	100 ml	31			
Bromophenol blue TS	24	JPH191	100 ml	25			
0.05% Bromophenol blue TS	12	JPH192	100 ml	25			
Bromophenol blue TS, pH 7.0	12	JPH193	100 ml	32			
N-Bromosuccinimide TS	12	JPH194	1000 ml	43			
Bromothymol blue-sodium hydroxide TS	12	JPH195	100 ml	40			
Bromothymol blue TS	12	JPH196	100 ml	28			
Calcium chloride TS	12	JPH197	100 ml	26			
0.1 mol/L Carbonate buffer solution, pH 9.6	12	JPH198	100 ml	29	JPH198a	1000 ml	48
Cerium (III) nitrate TS	12	JPH199	100 ml	26	JPH199a	1000 ml	43
Cerium (IV) tetraammonium sulfate-phosphoric acid TS	12	JPH200	100 ml	26			
Cerium (IV) tetraammonium sulfate TS	12	JPH201	100 ml	46			
Chloral hydrate TS	12	JPH202	100 ml	55			
Chromium (VI) trioxide TS	12	JPH203	100 ml	26			
Chromotropic acid TS	12	JPH204	100 ml	94			
Citric acid-acetic acid TS	12	JPH205	100 ml	48			
Citric acid-phosphate-acetonitrile TS	12	JPH206	100 ml	43	JPH206a	1000 ml	70
0.01 mol/L Citric acid TS	12	JPH207	100 ml	26	JPH207a	1000 ml	43

1 mol/L Citric acid TS for buffer solution	12	JPH208	100 ml	32	JPH208a	1000 ml	58
Cobalt (II) chloride-ethanol TS	12	JPH209	100 ml	43			
Cobalt (II) chloride TS	12	JPH210	100 ml	40			
Congo red TS	24	JPH211	100 ml	25			
Copper (II) acetate TS, strong	12	JPH212	100 ml	30	JPH212a	200 ml	43
Copper (II) chloride-acetone TS	12	JPH213	100 ml	48			
Copper (II) sulfate solution, alkaline	12	JPH214	1000 ml	72			
Copper (II) sulfate TS	12	JPH215	100 ml	26			
m-Cresol purple TS	24	JPH216	100 ml	25			
Cresol red TS	12	JPH217	100 ml	25			
Crystal violet TS	12	JPH218	100 ml	29			
1 mol/L Cupriethylenediamine TS	12	JPH219	1000 ml	200			
2,3-Diaminonaphthalene TS	12	JPH220	100 ml	97			
2,4-Diaminophenol hydrochloride TS	6	JPH221	100 ml	55			
Dichlorofluorescein TS	12	JPH222	100 ml	46			
Dilute bismuth subnitrate-potassium iodide TS for spray	12	JPH223	100 ml	56			
4-Dimethylaminobenzaldehyde-hydrochloric acid TS	12	JPH224	100 ml	57			
4-Dimethylaminobenzylidene rhodanine TS	12	JPH225	100 ml	32			
1,3-Dinitrobenzene TS, alkaline (0.008mol/L solution)	12	JPH226	100 ml	51	JPH226a	200 ml	77
2,4-Dinitrophenylhydrazine-diethylene glycol dimethyl ether TS	6	JPH227	100 ml	73			
2,4-Dinitrophenylhydrazine-ethanol TS	6	JPH228	100 ml	73			
2,4-Dinitrophenylhydrazine TS	6	JPH229	100 ml	55			
Diphenylamine-acetic acid TS	12	JPH230	100 ml	66			
Diphenylamine TS	12	JPH231	100 ml	37			
Diphenylcarbazone TS	12	JPH232	100 ml	57			
Dipotassium hydrogen phosphate-citric acid buffer solution, pH 5.3	12	JPH233	100 ml	41	JPH233a	200 ml	61
1 mol/L Dipotassium hydrogen phosphate TS for buffer solution	12	JPH234	100 ml	41	JPH234a	1000 ml	99
0.1 mol/L Disodium dihydrogen ethylenediamine tetraacetate TS	24	JPH235	1000 ml	44			
0.04 mol/L Disodium dihydrogen ethylenediamine tetraacetate TS	24	JPH236	1000 ml	44			
0.4 mol/L Disodium dihydrogen ethylenediamine tetraacetate TS, pH 8.5	24	JPH237	1000 ml	61			
Disodium hydrogen phosphate-citric acid buffer solution, pH 3.0	12	JPH238	100 ml	29	JPH238a	1000 ml	48
Disodium hydrogen phosphate-citric acid buffer solution, pH 4.5	12	JPH239	100 ml	29	JPH239a	1000 ml	48

Disodium hydrogen phosphate-citric acid buffer solution, pH 5.4	12	JPH240	100 ml	29	JPH240a	1000 ml	48
Disodium hydrogen phosphate-citric acid buffer solution, 0.05 mol/L, pH 6.0	12	JPH241	100 ml	29	JPH241a	1000 ml	48
Disodium hydrogen phosphate-citric acid buffer solution, pH 6.0	12	JPH242	100 ml	29	JPH242a	1000 ml	48
Disodium hydrogen phosphate-citric acid buffer solution, pH 7.2	12	JPH243	100 ml	29	JPH243a	1000 ml	48
Disodium hydrogen phosphate-citric acid buffer solution for penicillium origin b-galactosidase, pH 4.5	12	JPH244	100 ml	29	JPH244a	1000 ml	48
Disodium hydrogen phosphate TS	12	JPH245	100 ml	26			
0.05 mol/L Disodium hydrogen phosphate TS	12	JPH246	1000 ml	43			
0.5 mol/L Disodium hydrogen phosphate TS	12	JPH247	1000 ml	73			
2,6-Di-tert-butylcresol TS	12	JPH248	100 ml	29			
Dragendorff's TS (A+B)	6	JPH249	100 ml	66			
Edetate Disodium TS	12	JPH250	1000 ml	29			
Eriochrome black T-sodium chloride indicator	24	JPH251	100 ml	25			
Ethanol, aldehyde-free	12	JPH252	1000 ml	142			
Ethanol, dilute	12	JPH253	1000 ml	43			
Ethylenediamine TS	12	JPH254	100 ml	45			
Fehling's TS (A+B)	12	JPH255	500+500 ml	99			
Fehling's TS for amyolytic activity test (A+B)	12	JPH256	500+500 ml	99			
Ferric Ammonium Sulfate TS	12	JPH257	100 ml				
Fluorescein sodium TS	12	JPH258	100 ml	25			
Folin's TS	12	JPH259	100 ml	136	JPH259a	1000 ml	374
Folin's TS, dilute	12	JPH260	100 ml	154	JPH260a	1000 ml	396
Formaldehyde solution TS	12	JPH261	100 ml	25			
Fuchsin-ethanol TS	12	JPH262	100 ml	35			
Gelatin-phosphate buffer solution	12	JPH263	100 ml	52	JPH263a	1000 ml	108
Gelatin-phosphate buffer solution, pH 7.0	12	JPH264	100 ml	44	JPH264a	1000 ml	94
Gelatin-phosphate buffer solution, pH 7.4	12	JPH265	100 ml	44	JPH265a	1000 ml	94
Gelatin-tris buffer solution	12	JPH266	100 ml	44	JPH266a	1000 ml	94
Gelatin-tris buffer solution, pH 8.0	12	JPH267	100 ml	44	JPH267a	1000 ml	94
Griess-Romijin's nitric acid reagent	12	JPH268	30 ml	66			
Griess-Romijin's nitrous acid reagent	12	JPH269	100 ml	66			
Hanus' TS	12	JPH270	100 ml	48	JPH270a	1000 ml	171
Hydrochloric acid-ammonium acetate buffer solution, pH 3.5	12	JPH271	100 ml	29	JPH271a	1000 ml	48
Hydrochloric acid, dilute	12	JPH272	100 ml	24	JPH272a	1000 ml	54



Hydrochloric acid-ethanol (95) TS	12	JPH273	100 ml	31	JPH273a	1000 ml	99
0.01 mol/L Hydrochloric acid-methanol TS	24	JPH274	100 ml	31	JPH274a	1000 ml	99
0.05 mol/L Hydrochloric acid-methanol TS	24	JPH275	100 ml	31	JPH275a	1000 ml	99
Hydrochloric acid-2-propanol TS	12	JPH276	100 ml	37	JPH276a	1000 ml	116
Hydrochloric acid-potassium chloride buffer solution, pH 2.0	12	JPH277	100 ml	29	JPH277a	1000 ml	48
Hydrochloric acid, purified	12	JPH278	100 ml	48	JPH278a	500 ml	107
0.001 mol/L Hydrochloric acid TS	12	JPH279	1000 ml	41			
0.01 mol/L Hydrochloric acid TS	12	JPH280	1000 ml	41			
0.02 mol/L Hydrochloric acid TS	12	JPH281	1000 ml	41			
0.05 mol/L Hydrochloric acid TS	12	JPH282	1000 ml	41			
0.1 mol/L Hydrochloric acid TS	12	JPH283	1000 ml	41			
0.2 mol/L Hydrochloric acid TS	12	JPH284	1000 ml	41			
0.5 mol/L Hydrochloric acid TS	12	JPH285	1000 ml	41			
1 mol/L Hydrochloric acid TS	24	JPH286	1000 ml	41			
2 mol/L Hydrochloric acid TS	24	JPH287	1000 ml	41			
3 mol/L Hydrochloric acid TS	24	JPH288	1000 ml	41			
5 mol/L Hydrochloric acid TS	24	JPH289	1000 ml	41			
6 mol/L Hydrochloric acid TS	24	JPH290	1000 ml	41			
7.5 mol/L Hydrochloric acid TS	24	JPH291	1000 ml	41			
10 mol/L Hydrochloric acid TS	24	JPH292	1000 ml	54			
Hydrogen hexachloroplatinate (IV) TS	12	JPH293	10 ml	539			
Hydrogen sulfide TS	6	JPH294	100 ml	81			
Hydroxylammonium chloride-iron (III) chloride TS	12	JPH295	100 ml	48			
Hydroxylammonium chloride TS	12	JPH296	100 ml	118			
Hydroxylammonium chloride TS, pH 3.1	12	JPH297	100 ml	48			
Hydroxylammonium chloride-ethanol TS	6	JPH298	100 ml	48	JPH298a	1000 ml	134
Imidazole TS	12	JPH299	100 ml	44			
Indigo carmine TS	3	JPH300	100 ml	25			
Iodine-starch TS	12	JPH301	100 ml	31			
Iodine TS	12	JPH302	100 ml	26	JPH302a	1000 ml	63
Iodine TS, dilute	12	JPH303	100 ml	25	JPH303a	1000 ml	43
0.5 mol/L Iodine TS	12	JPH304	100 ml	28	JPH304a	1000 ml	46
Iron (III) chloride-acetic acid TS	12	JPH305	100 ml	43			
Iron (III) chloride-iodine TS	6	JPH306	100 ml	57			
Iron (III) chloride-methanol TS	12	JPH307	100 ml	43			
Iron (III) chloride-pyridine TS, anhydrous	12	JPH308	100 ml	125			
Iron (III) chloride TS	12	JPH309	100 ml	26			
Iron (III) chloride TS, acidic	12	JPH310	100 ml	46			
Iron (III) nitrate TS	12	JPH311	100 ml	37	JPH311a	500 ml	72

Iron (III) perchlorate-ethanol TS	12	JPH312	100 ml	46			
Iron (III) sulfate TS	12	JPH313	100 ml	29	JPH313a	1000 ml	48
Iron (II) tartrate TS	12	JPH314	100 ml	37			
Iron (II) thiocyanate TS	6	JPH315	100 ml	70			
Iron-phenol TS	6	JPH316	100 ml	123			
Isoniazid TS	12	JPH317	100 ml	37	JPH317a	200 ml	50
Lactic acid TS	12	JPH318	100 ml	28			
Lead (II) acetate TS	6	JPH319	100 ml	33			
Lead subacetate TS	12	JPH320	100 ml	45			
Magnesia TS	12	JPH321	100 ml	37			
Magnesium sulfate TS	12	JPH322	100 ml	26			
Mercury (II) acetate TS for nonaqueous titration	6	JPH323	100 ml	59			
Mercury (II) chloride TS	12	JPH324	100 ml	31			
Metanil yellow TS	12	JPH325	100 ml	59	JPH325a	200 ml	92
Methanesulfonic acid TS	12	JPH326	100 ml	24	JPH326a	500 ml	53
0.1 mol/L Methanesulfonic acid TS	12	JPH327	100 ml	24	JPH327a	500 ml	37
Methanol, anhydrous	12	JPH328	100 ml	88	JPH328a	1000 ml	215
Methylene blue-potassium perchlorate TS	12	JPH329	100 ml	28	JPH329a	500 ml	55
Methylene blue-sulfuric acid-sodium dihydrogenphosphate TS	12	JPH330	100 ml	37	JPH330a	1000 ml	112
Methylene blue TS	12	JPH331	100 ml	25			
Methyl orange-boric acid TS	12	JPH332	100 ml	48	JPH332a	500 ml	77
Methyl orange TS	24	JPH333	100 ml	25			
Methyl orange-xylenecyanol FF TS	12	JPH334	100 ml	28	JPH334a	500 ml	55
Methyl red-methylene blue TS	12	JPH335	100 ml	28			
Methyl red TS	18	JPH336	100 ml	25			
Methyl red TS for acid or alkali test	6	JPH337	100 ml	28	JPH337a	200 ml	44
Methylthymol blue-potassium nitrate indicator	12	JPH338	50 ml	40			
Methylthymol blue-sodium chloride indicator	12	JPH339	50 ml	48			
Methyl yellow TS	12	JPH340	100 ml	25			
Molybdenum (III) oxide-citric acid TS	12	JPH341	100 ml	43	JPH341a	1000 ml	154
0.02 mol/L 3-(N-Morpholino)propanesulfonic acid buffer solution, pH 7.0	6	JPH342	100 ml	32	JPH342a	1000 ml	59
0.02 mol/L 3-(N-Morpholino)propanesulfonic acid buffer solution, pH 8.0	6	JPH343	100 ml	32	JPH343a	1000 ml	59
0.1 mol/L 3-(N-Morpholino)propanesulfonic acid buffer solution, pH 7.0	6	JPH344	100 ml	34	JPH344a	1000 ml	86
Murexide-sodium chloride indicator	12	JPH345	30 ml	25	JPH345a	100 ml	37
1,3-Naphthalenediol	12	JPH346	30 ml	37	JPH346a	100 ml	51
p-Naphtholbenzein TS	12	JPH347	100 ml	37			

Neutral red TS	12	JPH348	100 ml	30				
Ninhydrin-acetic acid TS	12	JPH349	100 ml	55				
Ninhydrin-butanol TS	12	JPH350	100 ml	46				
Ninhydrin-citric acid-acetic acid TS	12	JPH351	100 ml	51				
0.2% Ninhydrin-water saturated 1-butanol TS	6	JPH352	100 ml	46	JPH352a	1000 ml	169	
Nitric acid, dilute	24	JPH353	100 ml	25				
Nitric acid TS, 2 mol/L	24	JPH354	100 ml	25				
2,2prime,2second-Nitrioltrisethanol buffer solution, pH 7.8	12	JPH355	1000 ml	51	JPH355a	5000 ml	134	
1-Nitroso-2-naphthol TS	12	JPH356	100 ml	44				
NN Indicator	12	JPH357	50 ml	44				
Oxalic acid TS	12	JPH358	100 ml	25				
Palladium (II) chloride TS	12	JPH359	100 ml	40	JPH359a	1000 ml	107	
Perchloric acid-ethanol TS	12	JPH360	100 ml	46				
1,10-Phenanthroline TS	12	JPH361	30 ml	33	JPH361a	100 ml	77	
Phenol-hydrochloric acid TS	12	JPH362	30 ml	25	JPH362a	100 ml	40	
Phenolphthalein-thymol blue TS (A+B)	12	JPH363(100:150)	ml	51				
Phenolphthalein TS	24	JPH364	100 ml	25				
Phenolphthalein TS, alkaline	12	JPH365	100 ml	28				
Phenol red TS	12	JPH366	100 ml	25				
Phenol red TS, dilute	12	JPH367	100 ml	29				
Phenylhydrazinium chloride TS	12	JPH368	100 ml	32	JPH368a	1000 ml	46	
Phosphate buffer solution for component determination of bupleurum root	12	JPH369	100 ml	29	JPH369a	1000 ml	48	
Phosphate buffer solution for pancreatin	12	JPH370	100 ml	43				
Phosphate buffer solution, pH 3.0	12	JPH371	100 ml	29	JPH371a	1000 ml	48	
0.02 mol/L Phosphate buffer solution, pH 3.0	12	JPH372	100 ml	29	JPH372a	1000 ml	48	
Phosphate buffer solution, pH 3.1	12	JPH373	100 ml	29	JPH373a	1000 ml	48	
0.05 mol/L Phosphate buffer solution, pH 3.5	12	JPH374	100 ml	29	JPH374a	1000 ml	48	
0.02 mol/L Phosphate buffer solution, pH 3.5	12	JPH375	100 ml	29	JPH375a	1000 ml	48	
0.1 mol/L Phosphate buffer solution, pH 4.5	12	JPH376	100 ml	29	JPH376a	1000 ml	48	
0.1 mol/L Phosphate buffer solution, pH 5.3	12	JPH377	100 ml	29	JPH377a	1000 ml	48	
1/15 mol/L Phosphate buffer solution, pH 5.6	12	JPH378	100 ml	29	JPH378a	1000 ml	48	
Phosphate buffer solution, pH 5.9	12	JPH379	100 ml	29	JPH379a	1000 ml	48	
Phosphate buffer solution, pH 6.0	12	JPH380	100 ml	29	JPH380a	1000 ml	48	
0.05 mol/L Phosphate buffer solution, pH 6.0	12	JPH381	100 ml	29	JPH381a	1000 ml	48	
Phosphate buffer solution, pH 6.2	12	JPH382	100 ml	29	JPH382a	1000 ml	48	
Phosphate buffer solution, pH 6.5	12	JPH383	100 ml	29	JPH383a	1000 ml	48	
Phosphate buffer solution, pH 6.8	12	JPH384	100 ml	29	JPH384a	1000 ml	48	
0.01 mol/L Phosphate buffer solution, pH 6.8	12	JPH385	100 ml	29	JPH385a	1000 ml	48	

0.1 mol/L Phosphate buffer solution, pH 6.8	12	JPH386	100 ml	29	JPH386a	1000 ml	48
Phosphate buffer solution, pH 7.0	12	JPH387	100 ml	29	JPH387a	1000 ml	48
0.05 mol/L Phosphate buffer solution, pH 7.0	12	JPH388	100 ml	29	JPH388a	1000 ml	48
0.1 mol/L Phosphate buffer solution, pH 7.0	12	JPH389	100 ml	29	JPH389a	1000 ml	48
Phosphate buffer solution, pH 7.2	12	JPH390	100 ml	29	JPH390a	1000 ml	48
Phosphate buffer solution, pH 7.4	12	JPH391	100 ml	29	JPH391a	1000 ml	48
0.03 mol/L Phosphate buffer solution, pH 7.5	12	JPH392	100 ml	29	JPH392a	1000 ml	48
Phosphate buffer solution, pH 8.0	12	JPH393	100 ml	29	JPH393a	1000 ml	48
0.1 mol/L Phosphate buffer solution for antibiotics, pH 8.0	12	JPH394	100 ml	29	JPH394a	1000 ml	48
0.02 mol/L Phosphate buffer solution, pH 8.0	12	JPH395	100 ml	29	JPH395a	1000 ml	48
0.1 mol/L Phosphate buffer solution, pH 8.0	12	JPH396	100 ml	29	JPH396a	1000 ml	48
0.2 mol/L Phosphate buffer solution, pH 10.5	12	JPH397	100 ml	29	JPH397a	1000 ml	48
Phosphate buffer solution, pH 12	12	JPH398	100 ml	29	JPH398a	1000 ml	48
Phosphate buffer solution for antibiotics, pH 6.5	12	JPH399	100 ml	29	JPH399a	1000 ml	48
Phosphate buffer solution for processed aconite root	12	JPH400	100 ml	29	JPH400a	1000 ml	48
Phosphate-buffered sodium chloride TS	12	JPH401	100 ml	29	JPH401a	1000 ml	48
0.01 mol/L Phosphate buffer-sodium chloride TS, pH 7.4	12	JPH402	100 ml	29	JPH402a	1000 ml	48
Phosphate TS	12	JPH403	100 ml	29	JPH403a	1000 ml	48
Phosphoric acid-sodium sulfate buffer solution, pH 2.3	12	JPH404	100 ml	29	JPH404a	1000 ml	48
Phosphoric acid-acetic acid-boric acid buffer solution, pH 2.0	12	JPH405	100 ml	29	JPH405a	1000 ml	48
Phosphotungstic acid TS	12	JPH406	100 ml	28	JPH406a	500 ml	61
Potassium acetate TS	12	JPH407	100 ml	48			
Potassium carbonate-sodium carbonate TS	12	JPH408	100 ml	35			
Potassium chloride-hydrochloric acid buffer solution	12	JPH409	100 ml	29	JPH409a	1000 ml	48
Potassium chloride TS, acidic	12	JPH410	100 ml	51	JPH410a	1000 ml	191
Potassium chromate TS	12	JPH411	100 ml	26			
Potassium dichromate-sulfuric acid TS	12	JPH412	100 ml	26			
Potassium dichromate TS	24	JPH413	100 ml	25	JPH413a	500 ml	55
0.02 mol/L Potassium dihydrogen phosphate TS	12	JPH414	100 ml	29	JPH414a	1000 ml	48
0.05 mol/L Potassium dihydrogen phosphate TS	12	JPH415	100 ml	29	JPH415a	1000 ml	48
0.1 mol/L Potassium dihydrogen phosphate TS, pH 2.0	12	JPH416	100 ml	29	JPH416a	1000 ml	48
0.25 mol/L Potassium dihydrogen phosphate TS, pH 3.5	12	JPH417	100 ml	29	JPH417a	1000 ml	48
0.33 mol/L Potassium dihydrogen phosphate TS	12	JPH418	100 ml	29	JPH418a	1000 ml	48
0.05 mol/L Potassium dihydrogen phosphate, pH 3.0	12	JPH419	100 ml	29	JPH419a	1000 ml	48
0.05 mol/L Potassium dihydrogen phosphate TS, pH 4.7	12	JPH420	100 ml	29	JPH420a	1000 ml	48
0.1 mol/L Potassium dihydrogen phosphate TS	12	JPH421	100 ml	29	JPH421a	1000 ml	48
0.2 mol/L Potassium dihydrogen phosphate TS	12	JPH422	100 ml	29	JPH422a	1000 ml	48
0.2 mol/L Potassium dihydrogen phosphate TS for buffer solution	12	JPH423	100 ml	29	JPH423a	1000 ml	48

Potassium hexacyanoferrate (III) TS, alkaline	12	JPH424	100 ml	29				
Potassium hexahydroxoantimonate (V) TS	12	JPH425	100 ml	36				
Potassium hydrogen phthalate buffer solution, pH 3.5	12	JPH426	100 ml	29	JPH426a	1000 ml	48	
Potassium hydrogen phthalate buffer solution, pH 4.6	12	JPH427	100 ml	29	JPH427a	1000 ml	48	
0.3 mol/L Potassium hydrogen phthalate buffer solution, pH 4.6	12	JPH428	100 ml	29	JPH428a	1000 ml	48	
Potassium hydrogen phthalate buffer solution, pH 5.6	12	JPH429	100 ml	29	JPH429a	1000 ml	48	
0.2 mol/L Potassium hydrogen phthalate TS for buffer solution	12	JPH430	100 ml	29	JPH430a	1000 ml	48	
Potassium hydroxide-ethanol TS, dilute	12	JPH431	100 ml	31	JPH431a	1000 ml	77	
Potassium hydroxide TS	12	JPH432	100 ml	25	JPH432a	1000 ml	43	
8 mol/L Potassium hydroxide TS	12	JPH433	100 ml	25				
Potassium iodide-zinc sulfate TS	12	JPH434	100 ml	29	JPH434a	200 ml	44	
Potassium periodate TS	12	JPH435	100 ml	29	JPH435a	1000 ml	48	
Potassium permanganate TS	12	JPH436	1000 ml	26				
Potassium permanganate TS, acidic	12	JPH437	100 ml	22				
Potassium sulfate TS	12	JPH438	100 ml	25	JPH438a	1000 ml	43	
Potassium thiocyanate TS	12	JPH439	100 ml	35				
Purified water for ammonium limit test	12	JPH440	1000 ml	44				
Pyridine, dehydrated	12	JPH441	100 ml	73				
Pyrophosphate buffer solution, pH 9.0	12	JPH442	100 ml	61				
0.05 mol/L Pyrophosphate buffer solution, pH 9.0	6	JPH443	100 ml	52				
Quinoline TS	6	JPH444	100 ml	107				
Selenious acid-sulfuric acid TS	6	JPH445	30 ml	32				
Silver chromate-saturated potassium chromate TS	6	JPH446	100 ml	52				
Silver nitrate-ammonia TS	6	JPH447	30 ml	32				
Silver nitrate TS	6	JPH448	100 ml	47	JPH448a	1000 ml	156	
Sodium acetate-acetone TS	12	JPH449	100 ml	53	JPH449a	500 ml	95	
Sodium acetate TS	12	JPH450	100 ml	53				
Sodium carbonate TS	12	JPH451	100 ml	25				
0.55 mol/L Sodium carbonate TS	12	JPH452	100 ml	25				
Sodium chloride TS	12	JPH453	100 ml	25				
0.1 mol/L Sodium chloride TS	12	JPH454	100 ml	25	JPH454a	1000 ml	43	
1 mol/L Sodium chloride TS	12	JPH455	100 ml	25	JPH455a	1000 ml	43	
2 mol/L Sodium dihydrogen phosphate TS	12	JPH456	100 ml	25	JPH456a	1000 ml	43	
Sodium dihydrogen phosphate TS, pH 2.5	12	JPH457	100 ml	29	JPH457a	1000 ml	48	
0.05 mol/L Sodium dihydrogen phosphate TS	12	JPH458	100 ml	25	JPH458a	1000 ml	43	
0.1 mol/L Sodium dihydrogen phosphate TS	12	JPH459	100 ml	29	JPH459a	1000 ml	48	
0.05 mol/L Sodium dihydrogen phosphate TS, pH 2.6	12	JPH460	100 ml	29	JPH460a	1000 ml	48	
0.05 mol/L Sodium dihydrogen phosphate TS, pH 3.0	12	JPH461	100 ml	29	JPH461a	1000 ml	48	

0.1 mol/L Sodium dihydrogen phosphate TS, pH 3.0	12	JPH462	100 ml	29	JPH462a	1000 ml	48
Sodium disulfite TS	12	JPH463	100 ml	32			
Sodium hydrogen carbonate TS	12	JPH464	100 ml	25	JPH464a	1000 ml	43
Sodium hydroxide-dioxane TS	12	JPH465	100 ml	40			
Sodium hydroxide TS	12	JPH466	100 ml	25	JPH466a	1000 ml	43
0.05 mol/L Sodium hydroxide TS	12	JPH467	100 ml	25			
0.5 mol/L Sodium hydroxide TS	24	JPH468	100 ml	25	JPH468a	1000 ml	43
2 mol/L Sodium hydroxide TS	24	JPH469	100 ml	26	JPH469a	1000 ml	44
4 mol/L Sodium hydroxide TS	24	JPH470	100 ml	26	JPH470a	1000 ml	44
6 mol/L Sodium hydroxide TS	24	JPH471	100 ml	26	JPH471a	1000 ml	55
8 mol/L Sodium hydroxide TS	24	JPH472	100 ml	26	JPH472a	1000 ml	68
Sodium lauryl sulfate TS	12	JPH473	100 ml	68	JPH473a	1000 ml	341
0.2 mol/l Sodium lauryl sulfate TS	12	JPH474	100 ml	35			
Sodium naphthoquinone sulfonate TS	12	JPH475	100 ml	70			
Sodium periodate TS	12	JPH476	100 ml	44	JPH476a	1000 ml	128
Sodium phosphate TS	12	JPH477	100 ml	25	JPH477a	1000 ml	43
0.1 mol/L Sodium phosphate buffer solution, pH 7.0	12	JPH478	100 ml	29	JPH478a	1000 ml	48
Sodium salicylate-sodium hydroxide TS	12	JPH479	100 ml	32			0
Sodium sulfide TS	3	JPH480	100 ml	73			0
1 mol/L Sodium sulfite TS	12	JPH481	30 ml	19	JPH481a	100 ml	26
Sodium tetraborate-calcium chloride buffer solution, pH 8.0	12	JPH482	100 ml	29	JPH482a	1000 ml	48
Sodium thiosulfate TS	12	JPH483	100 ml	26	JPH483a	1000 ml	44
Sulfosalicylic acid TS	12	JPH484	100 ml	25			
Sulfuric acid, dilute	24	JPH485	100 ml	25	JPH485a	1000 ml	43
Sulfuric acid-ethanol TS	24	JPH486	100 ml	32	JPH486a	1000 ml	77
Sulfuric acid-hexane-methanol TS	12	JPH487	100 ml	44			
Sulfuric acid-methanol TS	12	JPH488	100 ml	37			
Sulfuric acid-methanol TS, 0.05 mol/L	12	JPH489	100 ml	37	JPH489a	1000 ml	165
Sulfuric acid-sodium dihydrogenphosphate TS	12	JPH490	100 ml	28	JPH490a	1000 ml	46
Sulfuric acid-sodium hydroxide TS	12	JPH491	100 ml	26	JPH491a	1000 ml	44
Sulfuric acid TS	12	JPH492	100 ml	29	JPH492a	1000 ml	48
0.05 mol/L Sulfuric acid TS	24	JPH493	1000 ml	31			
0.25 mol/L Sulfuric acid TS	24	JPH494	1000 ml	31			
0.5 mol/L Sulfuric acid TS	24	JPH495	1000 ml	31			
2 mol/L Sulfuric acid TS	24	JPH496	1000 ml	33			
Tartrate buffer solution, pH 3.0	12	JPH497	100 ml	29	JPH497a	1000 ml	48
0.005 mol/L Tetrabutylammonium hydroxide TS	12	JPH498	100 ml	33	JPH498a	1000 ml	61
Tetrabutylammonium hydroxide-methanol TS	12	JPH499	100 ml	72	JPH499a	1000 ml	330
10% Tetrabutylammonium hydroxide-methanol TS	12	JPH500	100 ml	66	JPH500a	1000 ml	297
Tetrahydroxyquinone indicator	12	JPH501	30 ml	32	JPH501a	100 ml	79



Tetramethylammonium hydroxide-methanol TS	12	JPH502	1000 ml	215				
Tetramethylammonium hydroxide TS	12	JPH503	100 ml	57				
Tetramethylammonium hydroxide TS, pH 5.5	12	JPH504	100 ml	29	JPH504a	1000 ml	48	
Tetraphenylboron potassium TS	6	JPH505	100 ml	73				
Thiourea TS	12	JPH506	100 ml	25				
Thymol blue-N,N-dimethylformamide TS	12	JPH507	100 ml	61				
Thymol blue TS	24	JPH508	100 ml	32				
Thymolphthalein TS	24	JPH509	100 ml	30				
Tin (II) chloride-sulfuric acid TS	12	JPH510	100 ml	43				
Tin (II) chloride TS, acidic	3	JPH511	100 ml	30				
Titanium (III) chloride-sulfuric acid TS	12	JPH512	100 ml	43				
Titanium (IV) oxide TS	12	JPH513	100 ml	43				
Trichloroacetic acid-gelatin-tris buffer solution	12	JPH514	100 ml	44	JPH514a	1000 ml	94	
Trichloroacetic acid TS	12	JPH515	100 ml	30				
Trichloroacetic acid TS for serrapeptase	12	JPH516	100 ml	37				
Triethylamine buffer solution, pH 3.2	12	JPH517	100 ml	29	JPH517a	1000 ml	48	
Triethylamine-phosphate buffer solution, pH 5.0	12	JPH518	100 ml	29	JPH518a	1000 ml	48	
Trifluoroacetic acid TS	24	JPH519	100 ml	25				
2,4,6-Trinitrophenol-ethanol TS	12	JPH520	100 ml	55				
2,4,6-Trinitrophenol TS	12	JPH521	100 ml	43				
Tris-acetic acid buffer solution, pH 6.5	12	JPH522	100 ml	29	JPH522a	1000 ml	48	
0.5 mol/L Tris buffer solution, pH 6.8	12	JPH523	100 ml	29	JPH523a	1000 ml	48	
Tris buffer solution, pH 7.0	12	JPH524	100 ml	29	JPH524a	1000 ml	48	
0.05 mol/L Tris buffer solution, pH 7.0	12	JPH525	100 ml	29	JPH525a	1000 ml	48	
0.1 mol/L Tris buffer solution, pH 8.0	12	JPH526	100 ml	29	JPH526a	1000 ml	48	
Tris buffer solution, pH 8.2	12	JPH527	100 ml	29	JPH527a	1000 ml	48	
Tris buffer solution, pH 8.4	12	JPH528	100 ml	29	JPH528a	1000 ml	48	
0.05 mol/L Tris buffer solution, pH 8.6	12	JPH529	100 ml	29	JPH529a	1000 ml	48	
Tris buffer solution, pH 8.8	12	JPH530	100 ml	29	JPH530a	1000 ml	48	
Tris buffer solution, pH 9.5	12	JPH531	100 ml	29	JPH531a	1000 ml	48	
0.2 mol/L Tris-hydrochloride buffer solution, pH 7.4	12	JPH532	100 ml	29	JPH532a	1000 ml	48	
0.05 mol/L Tris-hydrochloride buffer solution, pH 7.5	12	JPH533	100 ml	29	JPH533a	1000 ml	48	
Uranyl acetate TS	12	JPH534	30 ml	33				
Uranyl acetate-zinc TS	12	JPH535	100 ml	105				
Vanillin-sulfuric acid-ethanol TS	12	JPH536	100 ml	36				
0.25 mol/L Zinc acetate buffer solution, pH 6.4	12	JPH537	100 ml	36	JPH537a	1000 ml	68	
Zinc chloride TS	12	JPH538	100 ml	29	JPH538a	1000 ml	48	
0.04 mol/L Zinc chloride TS	12	JPH539	100 ml	25	JPH539a	1000 ml	43	
Zinc iodide-starch TS	12	JPH540	100 ml	62				
Zinc sulfate TS	12	JPH541	100 ml	43				
Zirconyl-alizarin red S TS	12	JPH542	30 ml	32				



# Indian Pharmacopoeia

## A. Standard Buffer Solutions

Standard Buffer Solutions are solutions of standard pH. They are used for reference purposes in pH measurements and for carrying out many pharmacopoeial tests which require adjustments to or maintenance of a specified pH.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Boric Acid and Potassium Chloride, 0.2M	6	IP001	100	ml	29	IP001a	1000	ml	48
Disodium Hydrogen Phosphate, 0.2M	6	IP002	100	ml	29	IP002a	1000	ml	48
Hydrochloric Acid, 0.2M	6	IP003	100	ml	29	IP003a	1000	ml	48
Potassium Chloride, 0.2M	6	IP004	100	ml	29	IP004a	1000	ml	48
Potassium Dihydrogen Phosphate, 0.2M	6	IP005	100	ml	29	IP005a	1000	ml	48
Potassium Hydrogen Phthalate, 0.2M	6	IP006	100	ml	29	IP006a	1000	ml	48
Acetate Buffer pH 2.8	6	IP007	100	ml	29	IP007a	1000	ml	48
Acetate Buffer pH 3.4	6	IP008	100	ml	29	IP008a	1000	ml	48
Acetate Buffer pH 3.5	6	IP009	100	ml	29	IP009a	1000	ml	48
Acetate Buffer pH 3.7	6	IP010	100	ml	29	IP010a	1000	ml	48
Acetate Buffer pH 4.0	6	IP011	100	ml	29	IP011a	1000	ml	48
Acetate Buffer pH 4.4	6	IP012	100	ml	29	IP012a	1000	ml	48
Acetate Buffer pH 4.6	6	IP013	100	ml	29	IP013a	1000	ml	48
Acetate Buffer pH 4.7	6	IP014	100	ml	29	IP014a	1000	ml	48
Acetate Buffer pH 5.0	6	IP015	100	ml	29	IP015a	1000	ml	48
Acetate Buffer pH 5.5	6	IP016	100	ml	29	IP016a	1000	ml	48
Acetate Buffer pH 6.0	6	IP017	100	ml	29	IP017a	1000	ml	48
Acetate Buffer Solution	6	IP018	100	ml	29	IP018a	1000	ml	48
Acetic Acid-Ammonium Acetate Buffer	6	IP019	100	ml	29	IP019a	1000	ml	48
Acetic Ammonia Buffer pH 3.7, Ethanolic	6	IP020	100	ml	29	IP020a	1000	ml	48
Acetone Solution, Buffered	6	IP021	100	ml	44	IP021a	1000	ml	97
Ammonia –Ammonium Chloride Buffer	6	IP022	100	ml	29	IP022a	1000	ml	48
Ammonia Buffer pH 9.5	6	IP023	100	ml	29	IP023a	1000	ml	48
Ammonia Buffer pH 10.0	6	IP024	100	ml	29	IP024a	1000	ml	48
Barbitone Buffer pH 7.4	6	IP025	100	ml	44	IP025a	1000	ml	97
Barbitone Buffer pH 8.6, Mixed	6	IP026	100	ml	44	IP026a	1000	ml	97
Boric Buffer pH 9.0	6	IP027	100	ml	29	IP027a	1000	ml	48
Buffer Solution pH 2.5	6	IP028	100	ml	29	IP028a	1000	ml	48
Carbonate Buffer pH 9.7	6	IP029	100	ml	29	IP029a	1000	ml	48
Chloride Buffer pH 2.0	6	IP030	100	ml	29	IP030a	1000	ml	48
Citro-phosphate Buffer pH 5.0	6	IP031	100	ml	29	IP031a	1000	ml	48

Citro-phosphate Buffer pH 6.0	6	IP032	100 ml	29	IP032a	1000 ml	48
Citro-phosphate Buffer pH 7.0	6	IP033	100 ml	29	IP033a	1000 ml	48
Citro-phosphate Buffer pH 7.2	6	IP034	100 ml	29	IP034a	1000 ml	48
Citro-phosphate Buffer pH 7.6	6	IP035	100 ml	29	IP035a	1000 ml	48
Cupric Sulphate Solution pH 4.0 Buffered	6	IP036	100 ml	29	IP036a	1000 ml	48
Diethanolamine Buffer pH 10.0	6	IP037	100 ml	44	IP037a	1000 ml	97
Glycine Buffer pH 11.3	6	IP038	100 ml	40	IP038a	1000 ml	66
Glycine Buffer Solution	6	IP039	100 ml	61	IP039a	500 ml	143
Imidazole Buffer pH 6.5	6	IP040	100 ml	29	IP040a	1000 ml	48
Palladium Chloride Solution, Buffered	6	IP041	100 ml	61			
Phosphate Buffer pH 2.0	6	IP042	100 ml	29	IP042a	1000 ml	48
Phosphate Buffer pH 2.5	6	IP043	100 ml	29	IP043a	1000 ml	48
Phosphate Buffer pH 3.6	6	IP044	100 ml	29	IP044a	1000 ml	48
Phosphate Buffer pH 4.0, Mixed	6	IP045	100 ml	29	IP045a	1000 ml	48
Phosphate Buffer pH 4.9	6	IP046	100 ml	29	IP046a	1000 ml	48
Phosphate Buffer pH 5.0	6	IP047	100 ml	29	IP047a	1000 ml	48
Phosphate Buffer pH 5.5, Mixed	6	IP048	100 ml	29	IP048a	1000 ml	48
Phosphate Buffer pH 6.5	6	IP049	100 ml	29	IP049a	1000 ml	48
Phosphate Buffer pH 6.8, Mixed	6	IP050	100 ml	29	IP050a	1000 ml	48
Phosphate Buffer pH 7.0 and Mixed	6	IP051	100 ml	29	IP051a	1000 ml	48
Phosphate Buffer pH 7.0 with Azide, Mixed	6	IP052	100 ml	35	IP052a	1000 ml	61
Phosphate Buffer pH 7.0, 0.067M Mixed	6	IP053	100 ml	29	IP053a	1000 ml	48
Phosphate Buffer pH 7.5, 0.33M Mixed	6	IP054	100 ml	29	IP054a	1000 ml	48
Phosphate Buffer pH 8.0, 0.02M	6	IP055	100 ml	29	IP055a	1000 ml	48
Phosphate Buffer, 0.025M Standard	6	IP056	100 ml	29	IP056a	1000 ml	48
Saline, Phosphate-buffered	6	IP057	100 ml	29	IP057a	1000 ml	48
Saline pH 6.4, Phosphate-buffered	6	IP058	100 ml	29	IP058a	1000 ml	48
Saline pH 7.4, Phosphate-buffered	6	IP059	100 ml	29	IP059a	1000 ml	48

## GENERAL REAGENTS

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetic Acid, xM		IP060	1000 ml		ask				
Acetic Acid, Dilute	24	IP061	100 ml		24	IP061a	1000 ml		43
Acetic Acid Sp. ,Dilute	24	IP062	100 ml		29	IP062a	1000 ml		48
Acetic Anhydride-Dioxan Solution	12	IP063	50 ml		48				
Aluminium Chloride Solution	12	IP064	100 ml		59				
Aminohydroxynaphthalenesulphonic Acid Solution	12	IP065	100 ml		55				

Ammonia, xM		IP066	1000 ml	ask				
Ammonia – Ammonium Chloride Solution, Strong	12	IP067	100 ml	29	IP061a	1000 ml	48	
Ammonia – Cyanide Solution Sp	12	IP068	100 ml	72				
Ammonia –Cyanide Wash Solution	12	IP069	100 ml	48				
Ammonia, xM Ethanolic		IP070	1000 ml	ask				
Ammonia, xM Methanolic		IP071	1000 ml	ask				
Ammonia Solution, Dilute	12	IP072	1000 ml	43				
Ammonia, 18M	12	IP073	1000 ml	43				
Ammonia Solution Sp., Dilute	12	IP074	100 ml	55				
Ammonia Solution, Iron-free	12	IP075	100 ml	55				
Ammonium Acetate, 0.1M	12	IP076	1000 ml	43				
Ammonium Carbonate, 2M	12	IP077	1000 ml	59				
Ammonium Carbonate Solution	12	IP078	100 ml	37				
Ammonium Chloride, 2M	12	IP079	1000 ml	48				
Ammonium Chloride – Ammonium Hydroxide Solution	12	IP080	100 ml	51				
Ammonium Chloride Solution	12	IP081	100 ml	29				
Ammonium Chloride Solution (Nessler's)	12	IP082	1000 ml	48				
Ammonium Citrate Solution	12	IP083	1000 ml	103				
Ammonium Citrate Solution, Alkaline	12	IP084	100 ml	94	IP084a	250 ml	176	
Ammonium Citrate Solution Sp	12	IP085	100 ml	88				
Ammonium Mercurithiocyanate Solution	12	IP086	100 ml	41	IP086a	1000 ml	66	
Ammonium Molybdate Solution	12	IP087	100 ml	25	IP087a	1000 ml	43	
Ammonium Molybdate Solution, Ethanolic (A+B)	12	IP088	50+200 ml	70				
Ammonium Molybdate – Sulphuric Acid Solution	12	IP089	100 ml	44				
Ammonium Nitrate, 0.007M	12	IP090	1000 ml	43				
Ammonium Oxalate, 0.1M	12	IP091	1000 ml	48				
Ammonium Oxalate Solution	12	IP092	100 ml	33	IP092a	1000 ml	81	
Ammonium Phosphate, Dibasic, 0.2M	12	IP093	1000 ml	43				
Ammonium Thiocyanate, xM		IP094	1000 ml	ask				
Ammonium Thiocyanate Solution	12	IP095	100 ml	35	IP095a	1000 ml	86	
Ammonium Thioglycollate Solution	12	IP096	100 ml	43	IP096a	500 ml	70	
Anisaldehyde Solution	12	IP097	100 ml	55				
Anisaldehyde Solution, Ethanolic	12	IP098	100 ml	77				
Antimony Trichloride Reagent (Solution I)	12	IP099	100 ml	57	IP099a	500 ml	154	
Antimony Trichloride Solution	12	IP100	100 ml	51				
Barium Chloride Solution	12	IP101	100 ml	25	IP101a	1000 ml	48	
Barium Hydroxide, 0.1M	24	IP102	1000 ml	48				
Barium Hydroxide Solution	24	IP103	1000 ml	48				
Blue Tetrazolium Solution	12	IP104	100 ml	44				

Borax, 0.2 M	12	IP105	1000 ml	48			
Boric Acid Solution	12	IP106	250 ml	51			
Bromine, 0.0167M	12	IP107	1000 ml	43			
Bromine Solution	12	IP108	100 ml	44			
Bromine Solution, Acetic	12	IP109	1000 ml	147			
Bromine Water	3	IP110	100 ml	37			
Cadmium Iodide Solution	12	IP111	100 ml	43			
Calcium Chloride,xM		IP112	1000 ml	ask			
Calcium Chloride Solution	12	IP113	100 ml	25	IP113a	1000 ml	43
Cerous Nitrate Solution	12	IP114	1000 ml	48			
Chloral Hydrate Solution	12	IP115	100 ml	55			
Chloroform Water	12	IP116	1000 ml	43			
Chromic Acid Solution	12	IP117	1000 ml	88			
Chromotropic Acid Solution	12	IP118	100 ml	94			
Citric Acid,0.1 M	12	IP119	1000 ml	43			
Citric-Molybdic Acid Solution	12	IP120	1000 ml	147			
Cobalt Chloride Solution	12	IP121	100 ml	61			
Cobalt Thiocyanate Solution	12	IP122	100 ml	61			
Copper Solution, Alkaline (Solution I)	12	IP123	1000 ml	43			
Copper Solution, Alkaline (Solution II)	12	IP124	100 ml	26			
Cupric Chloride-Pyridine Reagent	12	IP125	100 ml	83			
Cupri-Citric Solution	12	IP126	100 ml	44	IP126a	1000 ml	77
Cupric Sulphate 0.02 M	12	IP127	1000 ml	43			
Cupric Sulphate Solution	12	IP128	1000 ml	43			
Cupric Sulphate Solution, Weak	12	IP129	1000 ml	43			
Cupri-Tartaric Solution (I+II)	12	IP130	500+500 ml	99			
Diazobenzenesulphonic Acid Solution	12	IP131	100 ml	72			
Dichloroacetic Acid Solution	12	IP132	500 ml	51			
Digoxin Reagent	12	IP133	100 ml	43			
Dimethylaminobenzaldehyde Solution, Ethanolic	12	IP134	250 ml	51			
Dimethylformamide Solution (5% v/v)	12	IP135	100 ml	25			
N,N-Dimethyl-p-phenylenediamine Sulphate Solution	12	IP136	100 ml	61			
Dinitrobenzene Solution	12	IP137	100 ml	42	IP137a	1000 ml	95
Dinitrobenzoic Acid Solution	12	IP138	100 ml	42	IP138a	1000 ml	95
Diphenylamine Solution	12	IP139	100 ml	37			
Diphenylcarbazone Mercuric Reagent (I+II)	12	IP140	100+100 ml	86			
Dipotassium Hydrogen Phosphate, 0.1M	12	IP141	1000 ml	43			
Disodium Edetate, xM		IP142	1000 ml	ask			
Disodium Hydrogen Phosphate xM		IP143	1000 ml	ask			

Disodium Hydrogen Phosphate Solution	12	IP144	100 ml	28	IP144a	1000 ml	57
Ethanol 90% (v/v)	24	IP145	1000 ml	47			
Ethanol 80% (v/v)	24	IP146	1000 ml	47			
Ethanol 75% (v/v)	24	IP147	1000 ml	47			
Ethanol 70% (v/v)	24	IP148	1000 ml	47			
Ethanol 60% (v/v)	24	IP149	1000 ml	47			
Ethanol 50% (v/v)	24	IP150	1000 ml	41			
Ethanol 40% (v/v)	24	IP151	1000 ml	41			
Ethanol 25% (v/v)	24	IP152	1000 ml	41			
Ethanol 20% (v/v)	24	IP153	1000 ml	41			
Ethanol, aldehyde-free	12	IP154	1000 ml	142			
Ferric Ammonium Sulphate Solution	12	IP155	100 ml	25	IP155a	1000 ml	43
Ferric Ammonium Sulphate Solution, Acid	12	IP156	100 ml	30			
Ferric Chloride-Ferricyanide-Arsenite Solution (I+II+III)	12	IP157	500+500+100ml	99			
Ferric Chloride Solution	12	IP158	100 ml	40	IP158a	1000 ml	99
Ferric Chloride Test Solution	12	IP159	100 ml	25	IP159a	1000 ml	45
Formic Acid, 15M	12	IP160	100 ml	45			
Hydrazine-molybdate Reagent	12	IP161	100 ml	34			
Hydrazine Reducing Mixture	12	IP162	30 ml	28			
Hydrochloric Acid, xM		IP163	1000 ml	ask			
Hydrochloric Acid, Dilute	24	IP164	1000 ml	54			
Hydrochloric Acid, xM Methanolic		IP165	1000 ml	ask			
Hydrochloric Acid AsT, Stannated	24	IP166	100 ml	50	IP166a	1000 ml	176
Hydroxylamine Hydrochloride Reagent	12	IP167	1000 ml	132			
Hydroxylamine Hydrochloride Solution	12	IP168	100 ml	35			
Hydroxylamine Hydrochloride Solution Sp	12	IP169	100 ml	90			
Hydroxylamine Solution, Ethanolic(90%)	12	IP170	100 ml	36			
Hypophosphorus Reagent	12	IP171	100 ml	40			
Imidazole-Mercury Reagent	12	IP172	100 ml	59			
Imidazole Solution	12	IP173	100 ml	44			
Indigo Carmine Solution	12	IP174	100 ml	25	IP174a	1000 ml	55
Iodine, xM		IP175	1000 ml	ask			
Iodine bromide solution	12	IP176	1000 ml	171			
Iodine Solution	12	IP177	100 ml	29			
Lanthanum Nitrate Solution	12	IP178	100 ml	40	IP178a	1000 ml	176
Lead Acetate Cotton	12	IP179	10 ml	88			
Lead Acetate Solution	6	IP180	1000 ml	51			
Lead Nitrate Solution	12	IP181	1000 ml	44			
Lead Nitrate Stock Solution	12	IP182	1000 ml	44			

Lead Subacetate Solution	12	IP183	100 ml	44				
Lithium Perchlorate, 0.1 M	12	IP184	1000 ml	51				
Magenta Solution, Decolorised	12	IP185	100 ml	42				
Magnesium Sulphate Solution, Ammoniacal	12	IP186	100 ml	46				
Mercuric Acetate Solution	6	IP187	100 ml	59				
Mercuric Bromide Solution, ethanolic	12	IP188	100 ml	72				
Mercuric Chloride, 0.2 M	12	IP189	1000 ml	70				
Mercuric Chloride Solution	12	IP190	100 ml	25				
Mercuric Sulphate Solution	12	IP191	100 ml	40				
Methanesulphonic Acid, 2 M Methanolic	12	IP192	1000 ml	227				
Methanol, Aldehyde-free	12	IP193	1000 ml	211				
Naphthalenediol Reagent Solution	6	IP194	100 ml	84				
Ninhydrin Solution	12	IP195	100 ml	46				
Ninhydrin Solution, Ethanolic	12	IP196	100 ml	46				
Nitric Acid, xM		IP197	1000 ml	ask				
Nitric Acid, Dilute	24	IP198	100 ml	25				
4-Nitrobenzyl Chloride Solution	12	IP199	100 ml	53				
Pararosaniline Solution, Decolorised	12	IP200	100 ml	73				
Perchloric Acid, xM		IP201	1000 ml	ask				
Periodic-Acetic Acids Solution	12	IP202	100 ml	53				
Phenanthroline Solution	12	IP203	100 ml	73				
Phenol Reagent	12	IP204	100 ml	136	IP204a	1000 ml	374	
Phosphomolybdic Acid Reagent	12	IP205	100 ml	99	IP205a	500 ml	385	
Phosphoric Acid, xM		IP206	1000 ml	ask				
Phosphoric Acid, Dilute	12	IP207	100 ml	25				
Phosphotungstic Acid Solution	12	IP208	100 ml	28	IP208a	500 ml	61	
Picric Acid Solution	12	IP209	100 ml	43				
Potassium Bromate, 0.0167 M	12	IP210	1000 ml	58				
Potassium Bromate, 0.0333 M	12	IP211	1000 ml	58				
Potassium Bromide, 0.001 M	12	IP212	1000 ml	48				
Potassium Carbonate, 2 M	12	IP213	1000 ml	69				
Potassium Chromate Solution	12	IP214	100 ml	26				
Potassium Cupri-Tartrate Solution	12	IP215	500+500 ml	99				
Potassium Cyanide Solution	12	IP216	100 ml	72				
Potassium Cyanide Solution Sp	12	IP217	100 ml	106				
Potassium Dichromate Solution	12	IP218	1000 ml	43				
Potassium Dichromate Solution, Dilute	12	IP219	1000 ml	43				
Potassium Dichromate Solution UV	12	IP220	80 ml	107				

( 2x10 ml Potassium Dichromate Solution for  
Absorbance Control at 430 nm and 6x10 ml blank)

Potassium Dihydrogen Phosphate, xM		IP221	1000	ml	ask				
Potassium Ferrocyanide Solution	6	IP222	100	ml	26				
Potassium Hydrogen Phthalate, xM		IP223	1000	ml	ask				
Potassium Hydroxide, xM		IP224	1000	ml	ask				
Potassium Hydroxide Solution	12	IP225	100	ml	25	IP225a	1000	ml	43
Potassium Iodate, xM		IP226	1000	ml	ask				
Potassium Iodate Solution	12	IP227	100	ml	25	IP227a	1000	ml	43
Potassium Iodide, 1M	12	IP228	100	ml	32	IP228a	1000	ml	153
Potassium Iodide Solution	12	IP229	100	ml	32	IP229a	1000	ml	153
Potassium Iodide Solution, Dilute	12	IP230	100	ml	30	IP230a	1000	ml	114
Potassium Iodide Solution, Iodinated	12	IP231	100	ml	37				
Potassium Iodobismuthate Solution	6	IP232	500	ml	213				
Potassium Iodobismuthate Solution, Acetic	3	IP233	100	ml	97				
Potassium Iodobismuthate Solution, Dilute	6	IP234	500	ml	213				
Potassium Iodoplatinate solution	12	IP235	10	ml	539				
Potassium Mercuri-Iodide Solution	12	IP236	100	ml	43				
Potassium Mercuri-Iodide Solution, Alkaline	12	IP237	500	ml	103	IP237a	1000	ml	178
Potassium Permanganate, xM		IP238	1000	ml	ask				
Potassium Permanganate-Phosphoric Acid Solution	12	IP239	100	ml	31				
Potassium Permanganate Solution	12	IP240	100	ml	29	IP240a	1000	ml	48
Potassium Permanganate Solution, Dilute	12	IP241	100	ml	26	IP241a	1000	ml	43
Potassium Thiocyanate Solution	12	IP242	100	ml	28	IP242a	1000	ml	75
Pyridine, Anhydrous	12	IP243	100	ml	86				
Quinoline Solution	6	IP244	100	ml	107				
Semicarbazide Acetate Solution	12	IP245	100	ml	74				
Silver Nitrate, xM		IP246	1000	ml	ask				
Silver Nitrate Solution	24	IP247	100	ml	66				
Silver Nitrate-Pyridine Reagent	12	IP248	100	ml	109				
Sodium Arsenite, 0.1 M:	12	IP249	1000	ml	64				
Sodium Arsenite Solution	12	IP250	100	ml	40				
Sodium Bicarbonate, xM		IP251	1000	ml	ask				
Sodium Bicarbonate Solution	12	IP252	1000	ml	25	IP252a	1000	ml	43
Sodium Butanesulphonate, xM		IP253	1000	ml	ask				
Sodium Carbonate, xM		IP254	1000	ml	ask				
Sodium Carbonate Solution	12	IP255	100	ml	25	IP255a	1000	ml	43
Sodium Carbonate Solution, Dilute	12	IP256	100	ml	25	IP256a	1000	ml	43
Sodium Cobaltinitrite Solution	12	IP257	100	ml	163				
Sodium 1 Decasulphonate Solution	12	IP258	100	ml	31				
Sodium Dihydrogen Phosphate, xM		IP259	1000	ml	ask				



Sodium Heptanesulphonate	12	IP260	100 ml	121				
Sodium Hexanesulphonate, 0.03M	12	IP261	1000 ml	125				
Sodium Hydroxide, xM		IP262	1000 ml	ask				
Sodium Hydroxide, xM Ethanolic		IP263	1000 ml	ask				
Sodium Hydroxide Solution	12	IP264	100 ml	25	IP264a	1000 ml	43	
Sodium Hydroxide Solution, Dilute	12	IP265	100 ml	25	IP265a	1000 ml	43	
Sodium Hypobromite Solution, Alkaline	6	IP266	100 ml	92				
Sodium Lauryl Sulphate, xM		IP267	1000 ml	ask				
Sodium Molybdotungstophosphate solution	12	IP268	100 ml	66	IP268a	500 ml	152	
Sodium Nitroprusside Carbonate Solution	6	IP269	100 ml	31				
Sodium Octanesulphonate, 0.02M	12	IP270	1000 ml	202				
Sodium Phosphate Solution	12	IP271	100 ml	25	IP271a	1000 ml	43	
Sodium Sulphide Solution	12	IP272	100 ml	52				
Sodium Thiosulphate,xM		IP273	1000 ml	ask				
Stannous Chloride Solution	12	IP274	100 ml	58	IP274a	1000 ml	244	
Stannous Chloride Solution AsT	12	IP275	100 ml	63	IP275a	1000 ml	177	
Startch Iodide Solution	6	IP276	100 ml	48				
Starch Solution	6	IP277	100 ml	42				
Sulphomolybdic Acid Solution	18	IP279	100 ml	40	IP279a	500 ml	72	
Sulphuric Acid, xM		IP280	1000 ml	ask				
Sulphuric Acid, x%		IP281	1000 ml	ask				
Sulphuric Acid, Dilute	24	IP282	100 ml	25	IP282a	1000 ml	43	
Sulphuric Acid, xM Ethanolic		IP283	1000 ml	ask				
Sulphuric Acid, x% Ethanolic		IP284	1000 ml	ask				
Sulphuric Acid-Formaldehyde Reagent	12	IP285	100 ml	51				
Sulphuric Acid, xM Methanolic		IP286	1000 ml	ask				
Sulphuric Acid, x% Methanolic		IP287	1000 ml	ask				
Thiocetamide Solution	12	IP288	1000 ml	133				
Trichloroacetic Acid Solution	12	IP289	100 ml	30				
Wash Solution pH 2.5	12	IP290	500 ml	54				
Water,Ammonia-free	12	IP291	1000 ml	26				
Water, Carbon Dioxide-free	12	IP292	1000 ml	26				
Zinc and Sodium Carbonate Reagent	12	IP293	30 ml	105				
Zinc Chloride-Formic Acid solution	12	IP294	100 ml	65				
Zinc Chloride Solution, Iodinated	12	IP295	100 ml	92				
Zinc Sulphate, xM		IP296	1000 ml	ask				
Zinc Sulphate Solution	6	IP297	100 ml	43				
Zirconyl Nitrate Solution	12	IP298	100 ml	46				

# INDICATORS AND INDICATORS TEST PAPERS

## A. Indicators

In the test and assays of the Pharmacopoeia, indicators are required to indicate the completion of a chemical reaction in volumetric analysis or to indicate the pH of solutions.

Description	Validity	Ref	Volume	msr	Price
Alizarin Red S Solution	12	IP299	100	ml	37
Brilliant Green Solution	12	IP300	100	ml	37
Bromocresol Green Solution	24	IP301	100	ml	25
Bromocresol Purple Solution	24	IP302	100	ml	28
Bromophenol Blue Solution	24	IP303	100	ml	25
Bromothymol Blue Solution	12	IP304	100	ml	28
Calcon Mixture	24	IP305	100	ml	37
Cresol Red Solution	12	IP306	100	ml	25
Crystal Violet Solution	12	IP307	100	ml	29
Dimethyl Yellow Solution	12	IP308	100	ml	28
Eosin Solution	12	IP309	100	ml	47
Eriochrome Black T Mixture	24	IP310	100	ml	30
Ferrouin Solution	24	IP311	100	ml	46
Litmus Solution	12	IP312	250	ml	150
Metanil Yellow Solution	12	IP313	100	ml	59
Methyl Orange Solution	24	IP314	100	ml	25
Methyl Red-Methylene Blue Solution	12	IP315	100	ml	28
Methyl Red Solution	18	IP316	100	ml	25
Methylene Blue Solution	12	IP317	100	ml	25
1-Naphtholbenzein Solution	12	IP318	100	ml	37
Neutral Red Solution	12	IP319	100	ml	30
Nile Blue A Solution	12	IP320	100	ml	45
Phenol Red Solution	12	IP321	100	ml	25
Phenolphthalein Solution	24	IP322	100	ml	25
Phenolphthalein Solution, Dilute	12	IP323	100	ml	25
Phenolphthalein-Thymol Blue Solution (A+B)	12	IP324	(100+150)	ml	51
Pyridylazonaphthol Solution	12	IP325	100	ml	37
Quinaldine Red Solution	12	IP326	100	ml	44
Ruthenium Red Solution	12	IP327	100	ml	121
Thymol Blue Solution	24	IP328	100	ml	32
Thymol Blue Solution, Ethanolic	12	IP329	100	ml	35
Thymolphthalein Solution	24	IP330	100	ml	30
Titan Yellow Solution	12	IP331	100	ml	25
Xylenol Orange Mixture	12	IP332	50	ml	58
Lead Acetate Paper	12	IP333	pack of 50	134	
Mercuric Chloride Paper	12	IP334	pack of 50	134	
Starch Iodate Paper	12	IP335	pack of 50	40	
Starch Iodide Paper	12	IP336	pack of 50	40	
Titan Yellow Paper	12	IP337	pack of 50	134	

# STANDARD SOLUTIONS

Description	Validity	Ref	Volume	msr	Price
Acetaldehyde Standard Solution (100 ppm C <sub>2</sub> H <sub>4</sub> O)	12	IP338	100	ml	48
Aluminium Standard Solution concentrate (0.176% w/v aluminium potassium sulphate )	12	IP339	100	ml	43
Aluminium Standard Solution concentrate (1.39% w/v aluminium nitrate)	12	IP340	100	ml	43
Arsenic Standard Solution concentrate (1000 ppm As)	12	IP341	100	ml	43
Barium Standard Solution concentrate (0.178% w/v barium chloride)	12	IP342	100	ml	43
Cadmium Standard Solution concentrate (0.228% w/v cadmium sulphate )	12	IP343	100	ml	43
Calcium Standard Solution concentrate (1000 ppm Ca)	12	IP344	100	ml	43
Calcium Standard Solution concentrate (1000 ppm Ca), Ethanolic	12	IP345	100	ml	54
Chloride Standard Solution concentrate (0.0824% w/v sodium chloride)	12	IP346	100	ml	43
Copper Standard Solution concentrate (1.965 g/l cupric sulphate)	12	IP347	100	ml	43
Copper Standard Solution concentrate (0.393% w/v cupric sulphate)	12	IP348	100	ml	43
Formaldehyde Standard Solution concentrate (3.0 g/l formaldehyde)	12	IP349	100	ml	43
Iron Standard Solution concentrate (0.1726% w/v ferric ammonium sulphate)	12	IP350	100	ml	43
Iron Standard Solution concentrate ( 7.022 g/l ferrous ammonium sulphate)	12	IP351	100	ml	43
Lead Standard Solution (0.1% Pb)	12	IP352	100	ml	43
Nickel Standard Solution concentrate (1000 ppm Ni)	12	IP353	100	ml	43
Nitrate Standard Solution concentrate (0.163% w/v potassium nitrate)	12	IP354	100	ml	43
Phosphate Standard Solution concentrate (0.143% w/v potassium dihydrogen phosphate)	12	IP355	100	ml	43
Silver Standard Solution concentrate (0.079% w/v silver nitrate)	12	IP356	100	ml	43
Sulphate Standard Solution concentrate (0.181% w/v potassium sulphate)	12	IP357	100	ml	43
Sulphate Standard Solution concentrate, Ethanolic (0.181% w/v solution of potassium sulphate in ethanol (30%))	12	IP358	100	ml	43
Tin Standard Solution concentrate (0.500 g/l tin)	12	IP359	100	ml	43
Zinc Standard Solution (100 ppm Zn)	12	IP360	100	ml	43

## VOLUMETRIC REAGENTS AND SOLUTIONS

Volumetric solutions, also known as standard solutions, are solutions of reagents of known concentrations intended primarily for use in quantitative determinations. Concentrations are usually expressed in terms of molarity (M).

### Molar Solutions

A molar solution contains 1g molecule of the reagent in 1000 ml of the solution. Solutions containing one-tenth of a gram-molecule of the reagent in 1000 ml are designated as 'tenth-molar' or 0.1 M; other molarities are similarly indicated.

## Preparation and Standardisation of Volumetric

It is not always possible nor is it essential, to prepare volumetric solutions of a desired theoretical molarity. A solution of approximately the desired molarity is prepared and standardised by titration against a solution of a primary standard. The molarity factor so obtained is used in all calculations, where such standardised solutions are employed. The molarity of Volumetric solutions is determined with a precision of 0.2%.

The water used in preparing volumetric solutions complies with the requirements of the monograph on Purified Water, unless otherwise specified.

Description	Validity	Ref	Volume	msr	Price
Ammonium Thiocyanate, 0.1M	12	IP361	1000	ml	31
Barium Chloride, 0.05M	12	IP362	1000	ml	41
Benzethonium Chloride, 0.004M	12	IP363	1000	ml	43
Bromine, 0.05M	12	IP364	1000	ml	43
Ceric Ammonium Nitrate, 0.1 M	12	IP365	1000	ml	101
Ceric Ammonium Sulphate, 0.1M	12	IP366	1000	ml	275
Cupric Sulphate, 0.02M	12	IP367	1000	ml	43
Diocetyl Sodium Sulphosuccinate, 0.0005M	12	IP368	100	ml	63
Disodium Edetate, 0.1M	24	IP369	1000	ml	44
Ferric Ammonium Sulphate, 0.1M	24	IP370	1000	ml	86
Ferrous Ammonium Sulphate, 0.1 M	12	IP371	1000	ml	86
Hydrochloric Acid, 1M	24	IP372	1000	ml	41
Hydrochloric Acid, 0.05 M Methanolic	24	IP373	1000	ml	99
Iodine, 0.05 M	12	IP374	1000	ml	44
Lead Nitrate, 0.1 M	24	IP375	1000	ml	35
Magnesium Sulphate, 0.05 M	12	IP376	1000	ml	43
Mercuric Nitrate, 0.02M	12	IP377	1000	ml	48
Nitric Acid, 1M	12	IP378	1000	ml	32
Perchloric Acid, 0.1 M	12	IP379	1000	ml	121
Potassium Dichromate, 0.0167 M	12	IP380	1000	ml	35
Potassium Hydrogen Phthalate, 0.05 M	12	IP381	1000	ml	176
Potassium Hydroxide, 0.1 M	12	IP382	1000	ml	41
Potassium Hydroxide, 0.1 M Ethanolic	12	IP383	1000	ml	59
Potassium Hydroxide in ethanol (60%), 0.5 M	12	IP384	1000	ml	55
Potassium Iodate, 0.05 M	12	IP385	1000	ml	46
Potassium Permanganate, 0.02 M	12	IP386	1000	ml	31
Silver Nitrate, 0.1 M	24	IP387	1000	ml	76
Sodium Hydroxide, 1M	12	IP388	1000	ml	20
Sodium Hydroxide, 0.1 M Ethanolic	12	IP389	1000	ml	48
Sodium Methoxide, 0.1 M	12	IP390	1000	ml	149
Sodium Nitrite, 0.1 M	12	IP391	1000	ml	35
Sodium Thiosulphate, 0.1M	12	IP392	1000	ml	32
Sulphuric Acid, 0.5M	24	IP393	1000	ml	31
Sulphuric Acid, 0.25M Ethanolic	24	IP394	1000	ml	59
Tetrabutylammonium Hydroxide, 0.1M	12	IP395	100	ml	136
Zinc Chloride, 0.1M	24	IP396	1000	ml	34
Zinc Sulphate, 0.1M	24	IP397	1000	ml	43

## Primary Standards

These are materials which, after drying under the specified conditions, are recommended for use as primary standards in the standardisation of volumetric solutions. The following are recommended for use as primary standards.

Description	Validity	Ref	Volume	msr	Price
Benzoic Acid	36	IP398	100	g	46
Potassium Bromate	36	IP399	50	g	46
Potassium Dichromate	36	IP400	50	g	46
Potassium Hydrogen Phthalate	36	IP401	50	g	46
Potassium Iodate	36	IP402	50	g	46
Sodium Carbonate, Anhydrous	36	IP403	50	g	46
Sodium Chloride	36	IP404	250	g	46
Sulphanilic Acid	36	IP405	100	g	46
Zinc, Granulated	36	IP406	100	g	46

# International Pharmacopoeia

The International Pharmacopoeia (Ph. Int.) constitutes a collection of recommended procedures for analysis and specifications for the determination of pharmaceutical substances, excipients, and dosage forms that is intended to serve as source material for reference or adaptation by any WHO Member State wishing to establish pharmaceutical requirements.

The test solutions and volumetric solutions mentioned in the International Pharmacopoeia, are described below. The test solutions are denoted by the abbreviation TS, and the volumetric solutions, or solutions that are similarly standardized, by the abbreviation VS.

The concentrations are expressed in conformity with the Système international d'Unit(c)s (SI) and they refer to the anhydrous substance.

Unless otherwise specified, all solutions indicated in the tests and assays of the International Pharmacopoeia are prepared with water R.

Description	Validity	Ref	Volume	msr	Price	Ref	Volume	msr	Price
Acetate buffer, pH 3.0, TS	12	INP001	100	ml	26	INP001a	1000	ml	48
Acetate buffer, pH 4.5, TS	12	INP002	100	ml	26	INP002a	1000	ml	48
Acetate buffer, pH 4.6, TS	12	INP003	100	ml	26	INP003a	1000	ml	48
Acetate buffer, pH 4.7, TS.	12	INP004	100	ml	26	INP004a	1000	ml	48
Acetate buffer, pH 5.0, TS	12	INP005	100	ml	26	INP005a	1000	ml	48
Acetate buffer, pH 5.5, TS.	12	INP006	100	ml	26	INP006a	1000	ml	48
Acetate buffer, pH 6.0, TS	12	INP007	100	ml	26	INP007a	1000	ml	48
Acetate standard buffer TS	12	INP008	100	ml	26	INP008a	1000	ml	48
Acetic acid (~90 g/l) TS	24	INP009	100	ml	26	INP009a	1000	ml	48
Acetic acid (~120 g/l) TS	24	INP010	100	ml	26	INP010a	1000	ml	48
Acetic acid (~300 g/l) TS	24	INP011	100	ml	26	INP011a	1000	ml	48
Acetic acid (~60 g/l) PbTS	24	INP012	100	ml	26	INP012a	1000	ml	48
Acetic acid (~60 g/l) TS.	24	INP013	100	ml	26	INP013a	1000	ml	48
Acetic acid (0.07 mol/l) VS	24	INP014	100	ml	26	INP014a	1000	ml	48
Acetic acid (5.0 g/l) TS	24	INP015	100	ml	26	INP015a	1000	ml	48
Acetic anhydride/dioxan TS		INP016	100	ml	268				
Acetonitrile (400 g/l) TS	24	INP017	100	ml	72	INP017a	1000	ml	158
Aluminium chloride TS	24	INP018	100	ml	59				
Aluminium standard (2 ppm Al) TS, 100 times concentrated	12		INP019	100	ml	43			
Aluminium standard (10 µg Al/ml) TS	12	INP020	100	ml	43				
4-Aminoantipyrine TS1	12	INP021	30	ml	24	INP021a	100	ml	55
Ammonia (~100 g/l) FeTS	12	INP022	100	ml	55				
Ammonia (~100 g/l) PbTS	12	INP023	100	ml	55				

Ammonia (~100 g/l) TS	12	INP024	100 ml	77				
Ammonia (~17 g/l) TS	12	INP025	1000 ml	61				
Ammonia (~35 g/l) TS	12	INP026	1000 ml	61				
Ammonia (~50 g/l) TS	12	INP027	1000 ml	64				
Ammonia buffer TS	24	INP028	1000 ml	73				
Ammonia buffer TS2	24	INP029	1000 ml	77				
Ammonium acetate (100 g/l) TS	12	INP030	100 ml	26	INP030a	1000 ml	50	
Ammonium acetate (50g/l) TS	6	INP031	1000 ml	64				
Ammonium acetate (80 g/l) TS	6	INP032	1000 ml	69				
Ammonium acetate buffer, pH 4.62, TS	12	INP033	1000 ml	77				
Ammonium chloride (10 µg/ml NH <sub>4</sub> ) TS, 10 times concentrated	12	INP034	100 ml	43				
Ammonium chloride (100 g/l) TS	24	INP035	100 ml	26	INP035a	1000 ml	66	
Ammonium chloride (20g/l) TS	24	INP036	1000 ml	62				
Ammonium chloride buffer, pH 10.0, TS	24	INP037	100 ml	43	INP037a	1000 ml	77	
Ammonium chloride buffer, pH 10.5, TS	24	INP038	100 ml	43	INP038a	1000 ml	77	
Ammonium chloride TS (Nessler's reagent)	12	INP039	1000 ml	48				
Ammonium chloride, dilute, TS	6	INP040	1000 ml	44				
Ammonium mercurithiocyanate TS	12	INP041	100 ml	33	INP041a	1000 ml	72	
Ammonium molybdate (45 g/l) TS	12	INP042	100 ml	37	INP042a	1000 ml	88	
Ammonium molybdate (95 g/l) TS	12	INP043	100 ml	44	INP043a	1000 ml	132	
Ammonium molybdate/nitric acid TS	6	INP044	100 ml	84	INP044a	1000 ml	253	
Ammonium molybdate/sulfuric acid TS	12	INP045	30 ml	46				
Ammonium molybdate/vanadate TS	12	INP046	100 ml	44				
Ammonium nitrate (50 g/l) TS	12	INP047	100 ml	44	INP047a	1000 ml	176	
Ammonium nitrate TS	12	INP048	100 ml	37				
Ammonium oxalate (25 g/l) TS	12	INP049	100 ml	37	INP049a	1000 ml	72	
Ammonium oxalate (50 g/l) TS	12	INP050	100 ml	40	INP050a	1000 ml	99	
Ammonium persulfate/phosphate buffer TS	12	INP051	100 ml	45				
Ammonium reineckate (10 g/l) TS	12	INP052	100 ml	39	INP052a	1000 ml	107	
Ammonium sulfamate (25 g/l) TS	12	INP053	100 ml	26	INP053a	1000 ml	62	
Ammonium sulfamate (5 g/l) TS	12	INP054	100 ml	25	INP054a	1000 ml	55	
Ammonium sulfamate (50 g/l) TS	12	INP055	100 ml	28	INP055a	1000 ml	75	
Ammonium sulfide TS	12	INP056	100 ml	81				
Ammonium thiocyanate (0.01 mol/l) VS	12	INP057	1000 ml	31				
Ammonium thiocyanate (0.05 mol/l) VS	12	INP058	1000 ml	31				
Ammonium thiocyanate (0.1 mol/l) VS	12	INP059	1000 ml	31				
Ammonium thiocyanate (10g/l) TS	12	INP060	100 ml	25	INP060a	1000 ml	43	
Ammonium thiocyanate (75 g/l) TS	12	INP061	100 ml	26	INP061a	1000 ml	72	
Ammonium thiocyanate/cobalt(II) nitrate TS	12	INP062	100 ml	92				



Aniline (25 g/l) TS	12	INP063	100 ml	62				
Anisaldehyde TS	12	INP064	100 ml	48				
Anisaldehyde/sulfuric acid TS	12	INP065	30 ml	55				
Antimony trichloride TS	12	INP066	100 ml	73				
Arsenic, strong, AsTS	12	INP067	100 ml	43				
Azo violet TS	12	INP068	100 ml	92				
Barium chloride (0.1 mol/l) VS	12	INP069	1000 ml	35				
Barium chloride (0.5 mol/l) VS	24	INP070	1000 ml	41				
Barium chloride (50 g/l) TS	24	INP071	1000 ml	66				
Barium hydroxide (0.15mol/l) VS	24	INP072	1000 ml	70				
Barium nitrate (0.01 mol/l) VS	24	INP073	1000 ml	41				
Benzalkonium chloride TS1	24	INP074	100 ml	39				
Blue tetrazolium/ethanol TS	12	INP075	100 ml	44				
Borate buffer, pH 8.0, TS	12	INP076	200 ml	52				
Borate buffer, pH 9.0, TS	12	INP077	200 ml	52				
Borate buffer, pH 9.6, TS	12	INP078	200 ml	52				
Boric acid (50 g/l) TS	12	INP079	100 ml	26	INP079a	1000 ml	88	
Brilliant green/acetic acid TS	12	INP080	100 ml	37				
Bromine AsTS	12	INP081	100 ml	44				
Bromocresol green TS1	12	INP082	100 ml	37				
Bromocresol green/ethanol TS	12	INP083	100 ml	40	INP083a	250 ml	66	
Bromocresol purple/ethanol TS	12	INP084	100 ml	37				
Bromophenol blue (1g/l) TS	12	INP085	100 ml	28				
Bromophenol blue TS	24	INP086	100 ml	25				
Bromophenol blue/ethanol TS	12	INP087	100 ml	40	INP087	250 ml	66	
Bromothymol blue/dimethylformamide TS	12	INP088	100 ml	187				
Bromothymol blue/ethanol TS	12	INP089	100 ml	40	INP089a	250 ml	66	
Brown stock standard TS	12	INP090	100 ml	88				
Calcium acetate (0.25 mol/l) VS	12	INP091	1000 ml	53				
Calcium chloride (3.7g/l) TS	24	INP092	1000 ml	41				
Calcium chloride (55 g/l) TS	24	INP093	1000 ml	41				
Calcium standard (10 µg/ml Ca) TS	12	INP094	100 ml	43				
Calcium standard (100 µg/ml Ca), ethanolic, TS	12	INP095	100 ml	54				
Calcium sulfate TS	12	INP096	100 ml	30				
Calcon indicator mixture R	24	INP097	100 ml	37				
Ceric ammonium nitrate (0.01 mol/l) VS	12	INP098	1000 ml	101				
Ceric ammonium sulfate (0.1 mol/l) VS	12	INP099	1000 ml	231				
Ceric ammonium sulfate/nitric acid TS	12	INP100	100 ml	43				
Ceric sulfate (0.1 mol/l) VS	24	INP101	1000 ml	96				

Ceric sulfate (35 g/l) TS	24	INP102	1000 ml	96			
Chloride standard (5 µg/l) TS	3	INP103	100 ml	43			
Citrate buffer, pH 4.0, TS	12	INP104	250 ml	52			
Citrate buffer, pH 5.4, TS	12	INP105	100 ml	43			
Citric acid (180 g/l) FeTS	12	INP106	1000 ml	35			
Citric acid (20 g/l) TS	12	INP107	1000 ml	33			
Cobalt colour TS	24	INP108	100 ml	87			
Cobalt colour, strong, TS	24	INP109	100 ml	92			
Cobalt(II) chloride (30 g/l) TS	12	INP110	100 ml	31	INP110a	1000 ml	114
Cobalt(II) chloride (5 g/l) TS	12	INP111	100 ml	30	INP111a	1000 ml	66
Cobalt(II) chloride TS	12	INP112	100 ml	77			
Cobalt(II) nitrate (10 g/l) TS	12	INP113	100 ml	37			
Cobalt(II) nitrate (100 g/l) TS	12	INP114	100 ml	68			
Cobaltous chloride TS	12	INP115	100 ml	56			
Colbatous thiocyanate TS	12	INP116	100 ml	68			
Copper colour TS	24	INP117	100 ml	58			
Copper colour, strong, TS	24	INP118	100 ml	83			
Copper edetate TS	12	INP119	50 ml	24	INP119a	1000 ml	66
Copper standard (10 µg/ml Cu) TS	12	INP120	1000 ml	41			
Copper standard (5 µg/ml Cu) TS	6	INP121	100 ml	26			
Copper standard TS1	12	INP122	1000 ml	41			
Copper standard TS2	6	INP123	100 ml	26	INP123a	1000 ml	41
Copper tetramine hydroxide TS	12	INP124	100 ml	55			
Copper(II) acetate (45 g/l) TS	12	INP125	100 ml	26	INP125a	1000 ml	68
Copper(II) chloride/ammonia TS	12	INP126	100 ml	26	INP126a	250 ml	39
Copper(II) sulfate (1 g/l) TS	12	INP127	100 ml	26	INP127a	1000 ml	41
Copper(II) sulfate (160 g/l) TS	12	INP128	100 ml	26	INP128a	1000 ml	90
Copper(II) sulfate (80 g/l) TS	12	INP129	100 ml	26	INP129a	1000 ml	64
Copper(II) sulfate/ammonia TS	12	INP130	100 ml	26	INP130a	1000 ml	55
Cresol red/ethanol TS	12	INP131	100 ml	25	INP131a	250 ml	39
Crystal violet/acetic acid TS	12	INP132	100 ml	29	INP132a	250 ml	51
Diammonium hydrogen phosphate (100 g/l) TS	12	INP133	100 ml	26	INP133a	1000 ml	68
Dichlorofluorescein TS	12	INP134	100 ml	46			
2,6-Dichloroquinone chlorimide/ethanol TS	12	INP135	100 ml	50			
Dichromate colour TS	12	INP136	100 ml	58			
Dichromate colour, strong, TS	12	INP137	100 ml	83			
Diethylphenylenediamine sulfate TS	12	INP138	100 ml	26	INP138a	1000 ml	55
Dimethylamine/ethanol TS	12	INP139	100 ml	117			
4-Dimethylaminobenzaldehyde TS2	12	INP140	100 ml	57			

4-Dimethylaminobenzaldehyde TS3	12	INP141	100 ml	57				
4-Dimethylaminobenzaldehyde TS4	12	INP142	100 ml	57				
4-Dimethylaminobenzaldehyde TS5	12	INP143	100 ml	52				
Dinitrobenzene/ethanol TS	12	INP144	100 ml	81				
Diphenylamine/sulfuric acid TS	12	INP145	100 ml	37				
Diphenylcarbazine TS	12	INP146	100 ml	41				
Diphenylcarbazone/ethanol TS	12	INP147	100 ml	57				
Disodium chromotropate (10 g/l) TS	12	INP148	100 ml	35				
Disodium chromotropate TS	12	INP149	30 ml	26				
Disodium edetate (0.01 mol/l) VS	24	INP150	1000 ml	44				
Disodium edetate (0.05 mol/l) VS	24	INP151	1000 ml	44				
Disodium edetate (0.1 mol/l) VS	24	INP152	1000 ml	44				
Disodium edetate (10 g/l) TS	24	INP153	1000 ml	36				
Disodium edetate (20 g/l) TS	24	INP154	1000 ml	36				
Disodium edetate (50 g/l) TS	24	INP155	1000 ml	36				
Disodium hydrogen phosphate (100 g/l) TS	24	INP156	100 ml	30	INP156a	1000 ml	90	
Disodium hydrogen phosphate (28.4 g/l) TS	24	INP157	100 ml	26	INP157a	1000 ml	56	
Disodium hydrogen phosphate (40 g/l) TS	24	INP158	100 ml	26	INP158a	1000 ml	64	
Domiphen bromide (10 g/l) TS	12	INP159	100 ml	40	INP159a	1000 ml	103	
Dragendorff reagent TS (A+B)	6	INP160	100 ml	66				
Eosin Y (5 g/l) TS	12	INP161	100 ml	47				
Ethanol (~150 g/l) TS	24	INP162	1000 ml	41				
Ethanol (~375 g/l) TS	24	INP163	1000 ml	41				
Ethanol (~457 g/l) TS	24	INP164	1000 ml	41				
Ethanol (~535 g/l) TS	24	INP165	1000 ml	47				
Ethanol (~600 g/l) TS	24	INP166	1000 ml	47				
Ethanol (~675 g/l) TS	24	INP167	1000 ml	47				
Ethanol (~710 g/l) TS	24	INP168	1000 ml	47				
Ethylene oxide stock solution R	12	INP169	100 ml	207	INP169a	500 ml	270	
Ferric ammonium sulfate (0.1 mol/l) VS	12	INP170	1000 ml	86				
Ferric ammonium sulfate (45 g/l) TS	12	INP171	1000 ml	81				
Ferric ammonium sulfate TS1	12	INP172	100 ml	26				
Ferric ammonium sulfate TS2	12	INP173	100 ml	26	INP173a	1000 ml		
Ferric chloride (25 g/l) TS	24	INP174	100 ml	26	INP174a	1000 ml	43	
Ferric chloride (50 g/l) TS	24	INP175	100 ml	26	INP175a	1000 ml	47	
Ferric chloride (65 g/l) TS	24	INP176	100 ml	26	INP176a	1000 ml	50	
Ferric chloride/ferricyanide/arsenite TS (A+C)	12	INP177	100 ml	94				
Ferroun TS	24	INP178	100 ml	46				
Ferrous ammonium sulfate (0.1 mol/l) VS	12	INP179	1000 ml	86				

Ferrous ammonium sulfate (1 g/l) TS	12	INP180	100 ml	26	INP180a	1000 ml	43
Fuchsin TS	12	INP181	100 ml	35	INP181a	200 ml	47
Fuchsin, decolorized, TS	12	INP182	100 ml	35			
Glyoxal bis(2-hydroxyanil) TS	12	INP183	100 ml	30			
Green stock standard TS	12	INP184	100 ml	57			
Holmium perchlorate TS	12	INP185	100 ml	298			
Hydrochloric acid (~4 g/l) TS	24	INP186	1000 ml	41			
Hydrochloric acid (~250 g/l), stannated, AsTS	24	INP187	100 ml	26			
Hydrochloric acid (~70 g/l) TS	24	INP188	1000 ml	41			
Hydrochloric acid (0.0001 mol/l) VS	12	INP189	1000 ml	44			
Hydrochloric acid (0.001 mol/l) VS	12	INP190	1000 ml	44			
Hydrochloric acid (0.005 mol/l) VS	12	INP191	1000 ml	44			
Hydrochloric acid (0.01 mol/l) VS	12	INP192	1000 ml	44			
Hydrochloric acid (0.015 mol/l) VS	12	INP193	1000 ml	44			
Hydrochloric acid (0.02 mol/l) VS	12	INP194	1000 ml	44			
Hydrochloric acid (0.05 mol/l) VS	12	INP195	1000 ml	44			
Hydrochloric acid (0.1 mol/l) VS	24	INP196	1000 ml	41			
Hydrochloric acid (0.2 mol/l) VS	24	INP197	1000 ml	41			
Hydrochloric acid (0.5 mol/l) VS	24	INP198	1000 ml	41			
Hydrochloric acid (1 mol/l) VS	24	INP199	1000 ml	41			
Hydrochloric acid (2 mol/l) VS	24	INP200	1000 ml	41			
Hydrochloric acid (5 mol/l) VS	24	INP201	1000 ml	41			
Hydrochloric acid (~250 g/l) TS	24	INP202	1000 ml	41			
Hydrochloric acid CITS	12	INP203	100 ml	26	INP203a	1000 ml	43
Hydrochloric acid/ethanol (1mol/l) VS	24	INP204	100 ml	31	INP204a	1000 ml	99
Hydrochloric acid/ethanol (0.1 mol/l) VS	24	INP205	100 ml	31	INP205a	1000 ml	99
Hydrochloric acid/methanol (0.01 mol/l) VS	24	INP206	100 ml	31	INP206a	1000 ml	99
Hydroxylamine hydrochloride (200 g/l) TS	12	INP207	100 ml	47			
Hydroxylamine hydrochloride (70 g/l) TS	12	INP208	100 ml	30			
Hydroxylamine hydrochloride TS	12	INP209	100 ml	48			
Hydroxylamine hydrochloride TS2	12	INP210	100 ml	52			
Imidazole/mercuric chloride TS	12	INP211	100 ml	167			
Iodide standard (20 µg l/ml) TS	12	INP212	100 ml	43			
Iodine (0.0001 mol/l) VS	12	INP213	1000 ml	44			
Iodine (0.0005 mol/l) VS	12	INP214	1000 ml	44			
Iodine (0.005 mol/l) VS	12	INP215	1000 ml	44			
Iodine (0.01 mol/l) VS	12	INP216	1000 ml	44			
Iodine (0.02 mol/l) VS	12	INP217	1000 ml	44			
Iodine (0.05 mol/l) VS	12	INP218	1000 ml	44			

Iodine (0.1 mol/l) VS	12	INP219	1000 ml	46			
Iodine bromide TS	12	INP220	1000 ml	171			
Iodine TS	12	INP221	100 ml	26			
Iodine/chloroform TS	12	INP222	100 ml	85			
Iodine/ethanol TS	12	INP223	1000 ml	123			
Iron colour TS	24	INP224	100 ml	58			
Iron colour, strong, TS	24	INP225	100 ml	83			
Iron standard FeTS	12	INP226	100 ml	43			
Isoniazid TS	12	INP227	100 ml	48	INP227a	200 ml	66
Lanthanum nitrate (30 g/l) TS	12	INP228	100 ml	32			
Lead acetate (80 g/l) TS	6	INP229	100 ml	33			
Lead acetate paper R	12	INP230	pack of 50 ml	147			
Lead nitrate (0.05 mol/l) VS	12	INP231	1000 ml	35			
Lead nitrate (0.1 mol/l) VS	24	INP232	1000 ml	35			
Lead nitrate (100 g/l) TS	12	INP233	100 ml	26			
Lead nitrate paper R	12	INP234	pack of 50 ml	72			
Lead, strong, PbTS	12	INP235	100 ml	43			
Lithium carbonate/trinitrophenol TS	12	INP236	100 ml	121			
Lithium chloride (10 g/l) TS	12	INP237	100 ml	30			
Lithium methoxide (0.1 mol/l) VS	12	INP238	1000 ml	314			
Lithium perchlorate/acetic acid TS	12	INP239	100 ml	41	INP239a	1000 ml	83
Magnesium (0.1 mg/ml Mg) TS	12	INP240	100 ml	43			
Magnesium chloride (0.1 mol/l) VS	24	INP241	1000 ml	52			
Magnesium standard (10 µg/ml Mg) TS	6	INP242	100 ml	43			
Magnesium sulfate (50 g/l) TS	12	INP243	100 ml	37			
Magnesium sulfate/sulfuric acid TS	12	INP244	100 ml	43			
Manganese sulfate (15 g/l) TS	12	INP245	100 ml	30	INP245a	1000 ml	44
Manganese/silver paper R	12	INP246	pack of 50 ml	147			
Mercuric acetate/acetic acid TS	6	INP247	100 ml	43	INP247a	1000 ml	154
Mercuric bromide AsTS	12	INP248	100 ml	72			
Mercuric bromide paper AsR	12	INP249	pack of 50 ml	147			
Mercuric chloride (2.7 g/l) TS	12	INP250	100 ml	25	INP250a	1000 ml	43
Mercuric chloride (65 g/l) TS	12	INP251	100 ml	35	INP251a	1000 ml	100
Mercuric chloride/ethanol TS	12	INP252	100 ml	41			
Mercuric nitrate (0.01 mol/l) VS	12	INP253	1000 ml	48			
Mercuric nitrate (0.02 mol/l) VS	12	INP254	1000 ml	48			
Mercuric nitrate TS	12	INP255	50 ml	92			
Mercuric sulfate TS	12	INP256	100 ml	41			
Methyl green/iodomercurate paper R	12	INP257	pack of 50 ml	147			

Methyl orange ethanol TS	24	INP258	100 ml	25				
Methyl orange/acetone TS	6	INP259	100 ml	64				
Methyl red/ethanol TS	12	INP260	250 ml	61				
Methyl red/methylthioninium chloride TS	12	INP261	50 ml	59				
Methylamine hydrochloride (20 g/l) TS	12	INP262	100 ml	37				
Methylthioninium chloride (0.2 g/l) TS	12	INP263	100 ml	26				
Methylthioninium chloride (1 g/l) TS	12	INP264	100 ml	28				
Monoethanolamine (0.1 mol/l) VS	12	INP265	100 ml	30	INP265a	1000 ml	53	
Mordant Black 11 indicator mixture R	24	INP266	100 ml	30				
N-(1-Naphthyl)ethylenediamine hydrochloride (1 g/l) TS	12	INP267	100 ml	32				
N-(1-Naphthyl)ethylenediamine hydrochloride (5 g/l) TS	12	INP268	100 ml	47				
N-(1-Naphthyl)ethylenediamine hydrochloride/1-propanol TS	12	INP269	30 ml	41				
N-(1-Naphthyl)ethylenediamine/ethanol TS	12	INP270	100 ml	48	INP270a	1000 ml	154	
1-Naphthol/ethanol TS	12	INP271	100 ml	32				
Neutral red/ethanol TS	12	INP272	100 ml	30				
Ninhydrin/ 2-propanol (5g/l) TS	12	INP273	100 ml	37				
Nitric acid (~130 g/l) TS	12	INP274	1000 ml	32				
Nitric acid (0.05 mol/l) VS	12	INP275	1000 ml	32				
Nitric acid (1 mol/l) VS	12	INP276	1000 ml	32				
Nitric acid (15 g/l) TS	12	INP277	1000 ml	32				
Nitric acid (3 g/l) TS	12	INP278	1000 ml	32				
4-Nitroaniline TS1	12	INP279	100 ml	29	INP279a	1000 ml	79	
1-Nitroso-2-naphthol-3,6-disodium disulfonate (2 g/l) TS	12	INP280	100 ml	30				
Opalescence stock standard TS	6	INP281	100 ml	58				
Oracet blue B/acetic acid TS	12	INP282	100 ml	55				
Oxalic acid (0.05 g/l) TS	12	INP283	100 ml	25	INP283a	1000 ml	43	
Oxalic acid/sulfuric acid TS	12	INP284	100 ml	36				
Perchloric acid (~140 g/l) TS	12	INP285	100 ml	32	INP285a	1000 ml	47	
Perchloric acid (0.02 mol/l) VS	12	INP286	1000 ml	116				
Perchloric acid (0.05 mol/l) VS	12	INP287	1000 ml	116				
Perchloric acid (0.1 mol/l) VS	12	INP288	1000 ml	116				
Perchloric acid TS	12	INP289	100 ml	32	INP289a	1000 ml	47	
Perchloric acid/dioxan (0.1 mol/l) VS	12	INP290	1000 ml	264				
Periodic-acetic acid TS	12	INP291	100 ml	43				
o-Phenanthroline (1 g/l) TS	12	INP292	100 ml	32				
o-Phenanthroline TS	12	INP293	100 ml	77				
Phenol (50 g/l) TS	12	INP294	100 ml	36	INP294a	1000 ml	132	
Phenol red/ethanol TS	12	INP295	100 ml	25	INP295a	250 ml	55	
Phenoldisulfonic acid TS	6	INP296	30 ml	72				

Phenolphthalein/ethanol TS	24	INP297	100 ml	25				
Phenolphthalein/pyridine TS	12	INP298	100 ml	81				
Phenylhydrazine hydrochloride (10 g/l) TS	12	INP299	100 ml	32	INP299a	1000 ml	46	
Phenylhydrazine/hydrochloric acid TS	12	INP300	100 ml	37				
Phosphate buffer, pH 4.0, TS	12	INP301	1000 ml	48				
Phosphate buffer, pH 6.4, TS	12	INP302	200 ml	36	INP302a	1000 ml	48	
Phosphate buffer, pH 6.9, TS	12	INP303	1000 ml	48				
Phosphate buffer, pH 7.0 (0.067 mol/l), TS	12	INP304	1000 ml	48				
Phosphate buffer, pH 7.0, TS	12	INP305	1000 ml	48				
Phosphate buffer, pH 7.2, TS	12	INP306	1000 ml	48				
Phosphate buffer, pH 7.4, TS.	12	INP307	1000 ml	48				
Phosphate buffer, pH 7.6, TS	12	INP308	200 ml	36	INP308a	1000 ml	48	
Phosphate buffer, pH 8.0, TS	12	INP309	1000 ml	48				
Phosphate standard (5 µg/ml) TS	12	INP310	100 ml	43				
Phosphate standard buffer, pH 6.8, TS	12	INP311	1000 ml	48				
Phosphate standard buffer, pH 7.4, TS	12	INP312	1000 ml	48				
Phosphate/citrate buffer pH 4.5, TS	12	INP313	1000 ml	48				
Phosphate/citrate buffer pH 6.0, TS	12	INP314	1000 ml	48				
Phosphomolybdic acid (80 g/l) TS	12	INP315	100 ml	88				
Phosphomolybdic acid/ethanol TS	12	INP316	100 ml	77				
Phosphoric acid (~105 g/l) TS	12	INP317	1000 ml	43				
Phosphoric acid (~20g/l) TS	12	INP318	1000 ml	43				
Phosphoric acid (~2.8 g/l) TS	12	INP319	100 ml	25				
Phthalate buffer, pH 3.4, TS	12	INP320	200 ml	36				
Phthalate buffer, pH 3.5, TS	12	INP321	200 ml	36				
Phthalate buffer, pH 4.0, TS	12	INP322	200 ml	36				
Platinic chloride (60 g/l) TS	12	INP323	10 ml	539				
Potassio-cupric tartrate TS (A+B)	12	INP324	100 ml	43				
Potassio-mercuric iodide TS	12	INP325	500 ml	97	INP325a	1000 ml	171	
Potassium acetate TS	12	INP326	100 ml	61	INP326a	1000 ml	286	
Potassium bromate (0.00833 mol/l) VS	12	INP327	1000 ml	58				
Potassium bromate (0.0167 mol/l) VS	12	INP328	1000 ml	58				
Potassium bromate (0.0333 mol/l) VS	12	INP329	1000 ml	58				
Potassium bromate (50 g/l) TS	12	INP330	100 ml	26	INP330a	1000 ml	53	
Potassium bromide (0.119 g/l) TS	12	INP331	100 ml	26	INP331a	1000 ml	43	
Potassium bromide (100 g/l) TS	12	INP332	100 ml	28	INP332a	1000 ml	72	
Potassium bromide (125 g/l) TS	12	INP333	100 ml	28	INP333a	1000 ml	79	
Potassium chloride (100 g/l) TS	12	INP334	100 ml	40	INP334a	1000 ml	110	
Potassium chloride (350 g/l) TS	12	INP335	100 ml	53	INP335a	1000 ml	264	



Potassium chromate (100 g/l) TS	12	INP336	100 ml	26	INP336a	1000 ml	70
Potassium cyanide (100 g/l) TS	12	INP337	100 ml	46	INP337a	1000 ml	111
Potassium cyanide (50 g/l) TS	12	INP338	100 ml	43	INP338a	1000 ml	101
Potassium cyanide PbTS	12	INP339	100 ml	48			
Potassium dichromate (0.0167 mol/l) VS	12	INP340	1000 ml	35			
Potassium dichromate (100 g/l) TS	12	INP341	100 ml	29	INP341a	1000 ml	81
Potassium dichromate TS	12	INP342	100 ml	26	INP342a	1000 ml	42
Potassium dichromate TS2	12	INP343	100 ml	30			
Potassium dichromate TS3	12	INP344	100 ml	30			
Potassium dihydrogen phosphate (100 g/l) TS	12	INP345	100 ml	29	INP345a	1000 ml	81
Potassium dihydrogen phosphate (13.6 g/l) TS	12	INP346	100 ml	26	INP346a	1000 ml	43
Potassium dihydrogen phosphate (27.2 g/l) TS	12	INP347	100 ml	28	INP347a	1000 ml	46
Potassium dihydrogen phosphate (70 g/l) TS	12	INP348	100 ml	29	INP348a	1000 ml	79
Potassium ferrocyanide (45 g/l) TS	12	INP349	100 ml	28	INP349a	1000 ml	46
Potassium hydrogen phthalate standard TS	12	INP350	100 ml	36	INP350a	1000 ml	48
Potassium hydroxide (~110 g/l) TS	12	INP351	100 ml	26	INP351a	1000 ml	43
Potassium hydroxide (~400 g/l) TS	12	INP352	100 ml	26	INP352a	1000 ml	43
Potassium hydroxide (~55 g/l) TS	12	INP353	100 ml	26	INP353a	1000 ml	43
Potassium hydroxide (~560g/l) TS	12	INP354	100 ml	26	INP354a	1000 ml	43
Potassium hydroxide (0.01 mol/l) VS	12	INP355	1000 ml	41			
Potassium hydroxide (0.1 mol/l) VS	12	INP356	1000 ml	41			
Potassium hydroxide (0.5 mol/l) VS	12	INP357	1000 ml	41			
Potassium hydroxide (1 mol/l) VS	12	INP358	1000 ml	41			
Potassium hydroxide/ethanol (0.02 mol/l) VS	12	INP359	1000 ml	59			
Potassium hydroxide/ethanol (0.1mol/l) VS	12	INP360	1000 ml	59			
Potassium hydroxide/ethanol (0.5 mol/l) VS	12	INP361	1000 ml	59			
Potassium hydroxide/ethanol (1 mol/l) VS	12	INP362	1000 ml	59			
Potassium hydroxide/ethanol TS1	12	INP363	100 ml	32	INP363a	1000 ml	54
Potassium hydroxide/ethanol TS2	12	INP364	100 ml	32	INP364a	1000 ml	54
Potassium hydroxide/methanol TS	12	INP365	100 ml	32	INP365a	1000 ml	90
Potassium iodate (0.01 mol/l) VS	12	INP366	1000 ml	46			
Potassium iodate (0.05 mol/l) VS	12	INP367	1000 ml	46			
Potassium iodide (100 g/l) TS	12	INP368	100 ml	30	INP368a	1000 ml	114
Potassium iodide (160g/l) TS	12	INP369	100 ml	31	INP369a	1000 ml	150
Potassium iodide (300 g/l) TS	12	INP370	100 ml	53	INP370a	1000 ml	270
Potassium iodide (400 g/l) TS	12	INP371	100 ml	59	INP371a	1000 ml	336
Potassium iodide (60 g/l) TS	12	INP372	100 ml	30	INP372a	1000 ml	79
Potassium iodide (80 g/l) TS	12	INP373	100 ml	30	INP373a	1000 ml	92
Potassium iodide/starch TS1	12	INP374	100 ml	31			

Potassium iodobismuthate TS1	6	INP375	500 ml	213				
Potassium iodobismuthate TS2	6	INP376	500 ml	213				
Potassium iodobismuthate/acetic acid TS	3	INP377	100 ml	97				
Potassium iodoplatinate TS	12	INP378	10 ml	539				
Potassium iodoplatinate TS2	12	INP379	100 ml	224				
Potassium nitrite (100 g/l) TS	12	INP380	100 ml	57				
Potassium periodate TS	6	INP381	100 ml	37	INP381a	1000 ml	83	
Potassium permanganate (0.0002 mol/l) VS	6	INP382	1000 ml	31				
Potassium permanganate (0.002 mol/l) VS	12	INP383	1000 ml	31				
Potassium permanganate (0.02 mol/l) VS	12	INP384	1000 ml	26				
Potassium permanganate (~25 g/l) TS	12	INP385	100 ml	26	INP385a	1000 ml	43	
Potassium permanganate (~10 g/l) TS	12	INP386	100 ml	26	INP386a	1000 ml	43	
Potassium permanganate (~1g/l) TS	12	INP387	100 ml	26	INP387a	1000 ml	43	
Potassium permanganate, basic (~5 g/l) TS	12	INP388	100 ml	28	INP388a	1000 ml	44	
Potassium permanganate, basic (~1 g/l) TS	12	INP389	100 ml	28	INP389a	1000 ml	44	
Potassium permanganate/phosphoric acid TS	12	INP390	100 ml	31				
Potassium sulfate (0.1 g/l) TS	12	INP391	100 ml	25	INP391a	1000 ml	43	
Potassium sulfate (174 mg/l) TS	12	INP392	100 ml	25	INP392a	1000 ml	43	
Potassium tetraoxalate standard TS	12	INP393	100 ml	25	INP393a	1000 ml	43	
Potassium thiocyanate (200 g/l) TS	12	INP394	100 ml	28	INP394a	1000 ml	86	
Pyrogallol, alkaline, TS (A+B)	12	INP395	2x50 ml	ml	53			
Quinaldine red/ethanol TS	24	INP396	100 ml	37				
Quinaldine red/methanol TS	24	INP397	100 ml	43				
Quinhydrone/methanol TS	24	INP398	100 ml	43				
Red stock standard TS	12	INP399	100 ml	58				
Resorcinol (20 g/l) TS	12	INP400	100 ml	25	INP400a	1000 ml	51	
Salicylaldehyde TS	12	INP401	100 ml	48				
Selenious acid/sulfuric acid TS	12	INP402	100 ml	54				
Silver nitrate (0.001 mol/l) VS	12	INP403	1000 ml	41				
Silver nitrate (0.01 mol/l) VS	12	INP404	1000 ml	44				
Silver nitrate (0.05 mol/l) VS	24	INP405	1000 ml	61				
Silver nitrate (0.1 mol/l) VS	24	INP406	1000 ml	76				
Silver nitrate (100 g/l) TS	12	INP407	100 ml	86				
Silver nitrate (40 g/l) TS	12	INP408	100 ml	55				
Silver standard (5 µg Ag/ml) TS	6	INP409	100 ml	43				
Sodium acetate (0.04 mol/l) VS	12	INP410	1000 ml	48				
Sodium acetate (150 g/l) TS	24	INP411	100 ml	69				
Sodium acetate (50 g/l) TS	24	INP412	100 ml	45				
Sodium acetate (60 g/l) TS	24	INP413	100 ml	47				
Sodium acetate/glacial acetic acid (0.1 mol/l) VS	12	INP414	1000 ml	158				

Sodium alizarinsulfonate (1 g/l) TS	12	INP415	100 ml	25				
Sodium alizarinsulfonate (10 g/l) TS	12	INP416	100 ml	42				
Sodium arsenite (0.05 mol/l) VS	12	INP417	1000 ml	64				
Sodium arsenite (0.1 mol/l) VS	12	INP418	1000 ml	64				
Sodium carbonate (10 g/l) TS	24	INP419	100 ml	25	INP419a	1000 ml	43	
Sodium carbonate (200 g/l) TS	24	INP420	100 ml	25	INP420a	1000 ml	43	
Sodium carbonate (50 g/l) TS	24	INP421	100 ml	25	INP421a	1000 ml	43	
Sodium carbonate (75 g/l) TS	24	INP422	100 ml	25	INP422a	1000 ml	43	
Sodium carbonate standard TS	24	INP423	100 ml	25	INP423a	1000 ml	43	
Sodium chloride (10 g/l) TS	24	INP424	100 ml	25	INP424a	1000 ml	43	
Sodium chloride (300g/l) TS	24	INP425	100 ml	25	INP425a	1000 ml	43	
Sodium chloride (400 g/l) TS	24	INP426	100 ml	25	INP426a	1000 ml	43	
Sodium chloride (9 g/l) TS	24	INP427	100 ml	25	INP427a	1000 ml	43	
Sodium citrate (250 g/l) TS	12	INP428	100 ml	26	INP428a	1000 ml	73	
Sodium cobaltinitrite (100 g/l) TS	12	INP429	100 ml	73				
Sodium diethyldithiocarbamate (0.8 g/l) TS	12	INP430	100 ml	26	INP430a	1000 ml	48	
Sodium dihydrogen phosphate (275 g/l) TS	12	INP431	100 ml	77				
Sodium dihydrogen phosphate (45 g/l) TS	12	INP432	100 ml	40				
Sodium hydrogen carbonate (100 g/l) TS	12	INP433	100 ml	26	INP433a	1000 ml	44	
Sodium hydrogen carbonate (40 g/l) TS	12	INP434	100 ml	26	INP434a	1000 ml	44	
Sodium hydroxide (~150 g/l) TS	12	INP435	100 ml	26	INP435a	1000 ml	44	
Sodium hydroxide (~200 g/l) TS	12	INP436	100 ml	26	INP436a	1000 ml	44	
Sodium hydroxide (~300 g/l) TS	12	INP437	100 ml	26	INP437a	1000 ml	44	
Sodium hydroxide (~400 g/l) TS	12	INP438	100 ml	26	INP438a	1000 ml	44	
Sodium hydroxide (~80 g/l) TS	12	INP439	100 ml	26	INP439a	1000 ml	44	
Sodium hydroxide (~40 g/l) TS	12	INP440	100 ml	26	INP440a	1000 ml	44	
Sodium hydroxide (0.001 mol/l) VS	12	INP441	1000 ml	24				
Sodium hydroxide (0.01 mol/l) VS	12	INP442	1000 ml	24				
Sodium hydroxide (0.01 mol/l), carbonate-free, VS	12	INP443	1000 ml	31				
Sodium hydroxide (0.02 mol/l) VS	12	INP444	1000 ml	24				
Sodium hydroxide (0.02 mol/l), carbonate-free, VS	12	INP445	1000 ml	31				
Sodium hydroxide (0.05 mol/l) VS	12	INP446	1000 ml	24				
Sodium hydroxide (0.1 mol/l) VS	12	INP447	1000 ml	20				
Sodium hydroxide (0.1 mol/l), carbonate-free, VS	12	INP448	1000 ml	24				
Sodium hydroxide (0.2 mol/l) VS	12	INP449	1000 ml	24				
Sodium hydroxide (0.2 mol/l), carbonate-free, VS	12	INP450	1000 ml	31				
Sodium hydroxide (0.5 mol/l) VS	12	INP451	1000 ml	24				
Sodium hydroxide (0.5 mol/l), carbonate-free, VS	12	INP452	1000 ml	31				
Sodium hydroxide (1 mol/l) VS	12	INP453	1000 ml	20				

Sodium hydroxide (1 mol/l), carbonate-free, VS	12	INP454	1000 ml	31				
Sodium hydroxide (10 g/l) TS	12	INP455	100 ml	26	INP455a	1000 ml	44	
Sodium hydroxide (50 g/l) TS	12	INP456	100 ml	26	INP456a	1000 ml	44	
Sodium hydroxide/ethanol TS	24	INP457	100 ml	31	INP457a	1000 ml	54	
Sodium hydroxide/methanol TS	24	INP458	100 ml	31	INP458a	1000 ml	86	
Sodium laurilsulfate (10 g/l) TS	12	INP459	100 ml	26	INP459a	1000 ml	55	
Sodium metabisulfite (50 g/l) TS	24	INP460	100 ml	26	INP460a	1000 ml	44	
Sodium metaperiodate TS	12	INP461	100 ml	48	INP461a	1000 ml	139	
Sodium methoxide (0.1 mol/l) VS	12	INP462	1000 ml	141				
Sodium molybdotungstophosphate TS	12	INP463	100 ml	66	INP463a	500 ml	152	
Sodium nitrite (0.1 mol/l) VS	12	INP464	1000 ml	35				
Sodium nitrite (10 g/l) TS	12	INP465	100 ml	25	INP465a	1000 ml	43	
Sodium nitrite (100 g/l) TS	12	INP466	100 ml	25	INP466a	1000 ml	46	
Sodium nitrite (20 g/l) TS	12	INP467	100 ml	25	INP467a	1000 ml	43	
Sodium nitrite (3 g/l) TS	12	INP468	100 ml	25	INP468a	1000 ml	43	
Sodium nitrite (35 g/l) TS	12	INP469	100 ml	25	INP469a	1000 ml	43	
Sodium nitrite (50 g/l) TS	12	INP470	100 ml	25	INP470a	1000 ml	43	
Sodium nitrite/hydrochloric acid TS	12	INP471	100 ml	30				
Sodium nitroprusside (8.5 g/l) TS	6	INP472	100 ml	28	INP472a	1000 ml	55	
Sodium nitroprusside, alkaline, TS	12	INP473	100 ml	28				
Sodium salicylate (11.5 g/l) TS	12	INP474	100 ml	25	INP474a	1000 ml	50	
Sodium standard (200 µg Na/ml) TS	12	INP475	100 ml	43				
Sodium sulfide TS	12	INP476	100 ml	52				
Sodium tetraborate (10 g/l) TS	12	INP477	100 ml	25	INP477a	1000 ml	43	
Sodium tetraborate standard TS	12	INP478	125 ml	28				
Sodium tetraphenylborate (30 g/l) TS	12	INP479	100 ml	73				
Sodium thiosulfate (0.002mol/l) VS	12	INP480	1000 ml	31				
Sodium thiosulfate (0.01 mol/l) VS	12	INP481	1000 ml	31				
Sodium thiosulfate (0.02 mol/l) VS	12	INP482	1000 ml	31				
Sodium thiosulfate (0.05 mol/l) VS	12	INP483	1000 ml	31				
Sodium thiosulfate (0.1 mol/l) VS	24	INP484	1000 ml	24				
Sodium thiosulfate (320 g/l) TS	24	INP485	100 ml	40				
Stannous chloride AsTS	12	INP486	100 ml	63	INP486a	1000 ml	177	
Stannous chloride TS	12	INP487	100 ml	58	INP487a	1000 ml	244	
Stannous chloride/hydrochloric acid TS1	12	INP488	100 ml	40				
Sudan red TS	12	INP489	100 ml	37				
Sulfamic acid (5 g/l) TS	12	INP490	100 ml	25	INP490a	1000 ml	43	
Sulfanilic acid, diazotized, TS	6	INP491	50 ml	66				
Sulfosalicylic acid (175 g/l) TS	12	INP492	100 ml	42	INP492a	1000 ml	127	

Sulfuric acid (~10 g/l) TS	24	INP493	100 ml	25	INP493a	1000 ml	43
Sulfuric acid (~100 g/l) TS	24	INP494	100 ml	25	INP494a	1000 ml	43
Sulfuric acid (~1125 g/l) TS	24	INP495	100 ml	36			
Sulfuric acid (~190 g/l) TS	24	INP496	100 ml	25	INP496a	1000 ml	43
Sulfuric acid (~440 g/l) TS	24	INP497	100 ml	36			
Sulfuric acid (~50 g/l) TS	24	INP498	100 ml	25	INP498a	1000 ml	43
Sulfuric acid (~570 g/l) TS	24	INP499	100 ml	32			
Sulfuric acid (~635 g/l) TS	24	INP500	100 ml	32			
Sulfuric acid (~700 g/l) TS	24	INP501	100 ml	32			
Sulfuric acid (0.005 mol/l) VS	24	INP502	1000 ml	31			
Sulfuric acid (0.01 mol/l) VS	24	INP503	1000 ml	31			
Sulfuric acid (0.05 mol/l) VS	24	INP504	1000 ml	31			
Sulfuric acid (0.1 mol/l) VS	24	INP505	1000 ml	31			
Sulfuric acid (0.125 mol/l) VS	24	INP506	1000 ml	31			
Sulfuric acid (0.25 mol/l) VS	24	INP507	1000 ml	31			
Sulfuric acid (0.5 mol/l) VS	24	INP508	1000 ml	31			
Sulfuric acid/ethanol (~0.05 mol/l)	12	INP509	100 ml	41			
Sulfuric acid/ethanol TS	12	INP510	100 ml	52			
Sulfuric acid/methanol TS	12	INP511	100 ml	63			
Tannic acid (50 g/l) TS	12	INP512	100 ml	28	INP512a	1000 ml	45
Tartaric acid (10 g/l) TS	12	INP513	100 ml	25	INP513a	1000 ml	43
Tartaric acid (200 g/l) TS	12	INP514	100 ml	51			
Tartaric acid (5 g/l) TS	12	INP515	100 ml	25	INP515a	1000 ml	43
Tetrabutylammonium hydroxide (0.1 mol/l) VS	12	INP516	100 ml	136	INP516a	1000 ml	605
Tetrabutylammonium hydroxide TS	12	INP517	100 ml	57			
Tetrabutylammonium hydroxide/methanol TS	12	INP518	100 ml	48			
Tetramethylammonium hydroxide/ethanol TS	12	INP519	100 ml	42			
Thiourea (0.1 g/l) TS	12	INP520	100 ml	26			
Thorium nitrate (0.005 mol/l) VS	12	INP521	1000 ml	86			
Thymol blue/dimethylformamide TS	12	INP522	100 ml	75			
Thymol blue/ethanol TS	12	INP523	100 ml	35			
Thymol blue/methanol TS	12	INP524	100 ml	48			
Thymol TS1	12	INP525	100 ml	48			
Thymol TS2	12	INP526	100 ml	48			
Thymol TS3	12	INP527	100 ml	48			
Thymolphthalein/dimethylformamide TS	12	INP528	100 ml	75			
Thymolphthalein/ethanol TS	24	INP529	100 ml	30			
Titan yellow TS	12	INP530	100 ml	25			
Titanium dioxide/sulfuric acid TS	12	INP531	100 ml	61			

Titanium trichloride (0.1 mol/l) VS	12	INP532	1000 ml	165				
4-Toluenesulfonic acid/ethanol TS	12	INP533	100 ml	55				
Triketohydrindene/butanol TS	12	INP534	100 ml	39				
Triketohydrindene/butanol/acetic acid TS	12	INP535	100 ml	42				
Triketohydrindene/ethanol TS	12	INP536	100 ml	37				
Triketohydrindene/pyridine/acetone TS	12	INP537	100 ml	48				
Triketohydrindene/sodium metabisulfite TS	12	INP538	100 ml	37				
Trimethylpyridine (50 g/l) TS	12	INP539	100 ml	39	INP539a	1000 ml	92	
Trisodium orthophosphate (2 g/l) TS	12	INP540	100 ml	25	INP540a	1000 ml	43	
Vanadium/sulfuric acid TS	12	INP541	100 ml	43				
Water R	12	INP542	5000 ml	69				
Water, ammonia-free, R	12	INP543	1000 ml	26				
Water, carbon-dioxide-free and ammonia-free, R	12	INP544	1000 ml	32				
Water, carbon-dioxide-free, R	12	INP545	1000 ml	26				
Xylenol orange indicator mixture R	12	INP546	50 ml	58				
Yellow stock standard TS	12	INP547	100 ml	58				
Zinc standard (20 µg/ml Zn) TS	12	INP548	100 ml	43				
Zirconyl nitrate TS	12	INP549	100 ml	46				

# GENERAL SALES TERMS AND CONDITIONS

## 1. ORDERING

1.1. We request that orders be made in writing with indication of the article number, quantity (number and size of packages) and article description.

Please, cite date and invoice number when referring to previous orders. This reference is intended, however, to be valid only for the nature of the product and not the price.

1.2. Orders placed by telephone will only become legally binding after they have been confirmed by us in writing or after we have sent the goods with invoice to the buyer.

1.3. We reserve the right to cancel or delay, in whole or in a part, orders or contracts for the supply of products due to unforeseen difficulties such as a result of force major circumstances occurring either in our own laboratory (facilities) or in those of our suppliers. Such developments relieve us the obligations previously assumed at the time the order was accepted.

1.4. In accordance with legal regulations, we reserve the right to terminate contracts or suspend deliveries in the event of changes in the economic conditions of the customers (bankruptcy, liquidation, insolvency, company dissolution or modification, etc.). In such cases the customer will be held responsible for breach of contract.

## 2. PRICES

2.1. The prices are intended for goods delivered ex works. Invoicing will be made in Euro at the prices applicable on the date of delivery. Our purchasers have freedom regarding resale prices.

2.2. In the case of a substantial increase in costs occurring prior to delivery of an order, we shall be entitled, after the customer has been duly informed, to surcharge this to the agreed price. The purchaser shall have the right to cancel his order within 7 days after notification of the price increase.

2.3. Transportation charges: expenses for delivery will be added on the invoice to the original amount (value of the goods).

## 3. DELIVERY

3.1. Delivery will be made as quickly as possible using the route agreed upon between us and the purchaser. We cannot, however, bind ourselves to a fixed delivery period.

3.2. In the event of being hindered in the fulfillment of our obligations owing to unforeseen circumstances, e.g. operational breakdowns, shortage of raw material, transport difficulties, etc. notwithstanding whether such should be suffered in our facilities, by our suppliers or by the postal services or forwarding agents, then the delivery period will be extended by reasonable amount provided that the supply or service is still able to be rendered. Should the above mentioned circumstances prevent the rendering of the supply then we shall be freed from our obligations in such respects.

3.3. Where, in the above mentioned cases, the delivery period becomes extended or the supplier is freed from his supply obligations, then no claims for compensation or rights of cancellation on the part of the ordering party can be derived from this.

## 4. PACKAGING

4.1. We package our goods using the most appropriate material based on the nature of the goods themselves and the means of shipment selected.

4.2. We provide packaging free of charge and do not accept its return.

## 5. GUARANTEE, NOTIFICATION OF DEFECTS, RETURN OF GOODS AND LIABILITY

5.1. Upon receipt the purchaser is obliged to check immediately if the goods correspond in quality and quantity to the contractual agreements. If this check is not carried out thoroughly and if apparent faults are not notified immediately, at the latest however within one week after receipt of the goods, the goods will be accepted in respect to such faults. Claims will not entail release from payment obligations.

5.2. Justified complaints will be acknowledged by price reduction, subsequent improvement, exchange or



repurchase against refund. Subsequent derived claims will be excluded.

5.3. Recognition can not be given to complaints against the quality of unstable products which have decomposed due to too long storage or incorrect storing conditions. We disclaim all liability for damages occurring as a result of improper handling or storage.

5.4. We shall not accept any returned goods without our prior agreement. Returned goods received by us without prior mutual agreement will be returned back to sender at his costs and risk.

5.5. Return of properly supplied goods will only be made in exceptional cases and with the proviso that the goods will be returned in their undamaged original packaging.

5.6. The purchaser shall be responsible for observing any official regulations in relation to dealing (supply, storage, processing, trade, etc.) in individual products. We shall reject any recourse to liability in respect of damage caused by our customers through non-observance of protective legislation (e.g.. regulation concerning dangerous substances).

## **6. PAYMENT**

6.1. Our invoices will be payable within 30 (thirty) days without deduction (unless otherwise agreed upon between us and the purchaser). Once the invoice term has become due, interest payable against the delay of payment is charged to the Purchaser in measure equal to the net rate of reference of the European Central Bank increased by 6 percentage points.

6.2. For bank transfers, bank drafts or girocheques, the time of receipt of payment shall be considered to be the date on which we receive the credit advice from the financial institution.

6.3. Where, during a provisional business relationship, the inability of the Purchaser to make payment provides valid evidence of suspect reliability, we shall be entitled to cancel all current supply contracts or to request payment in advance.

## **7 CHOICE OF DOMICILE AND COURT OF JURISDICTION**

7.1. All relations between our Company and its Customers are within the jurisdiction of the Stara Zagora Court. The Stara Zagora judicial authorities will have sole jurisdiction over any controversy arising within the context of these relations



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