USER GUIDE

AHN myDpette® Bottle Top Dispenser

AHN

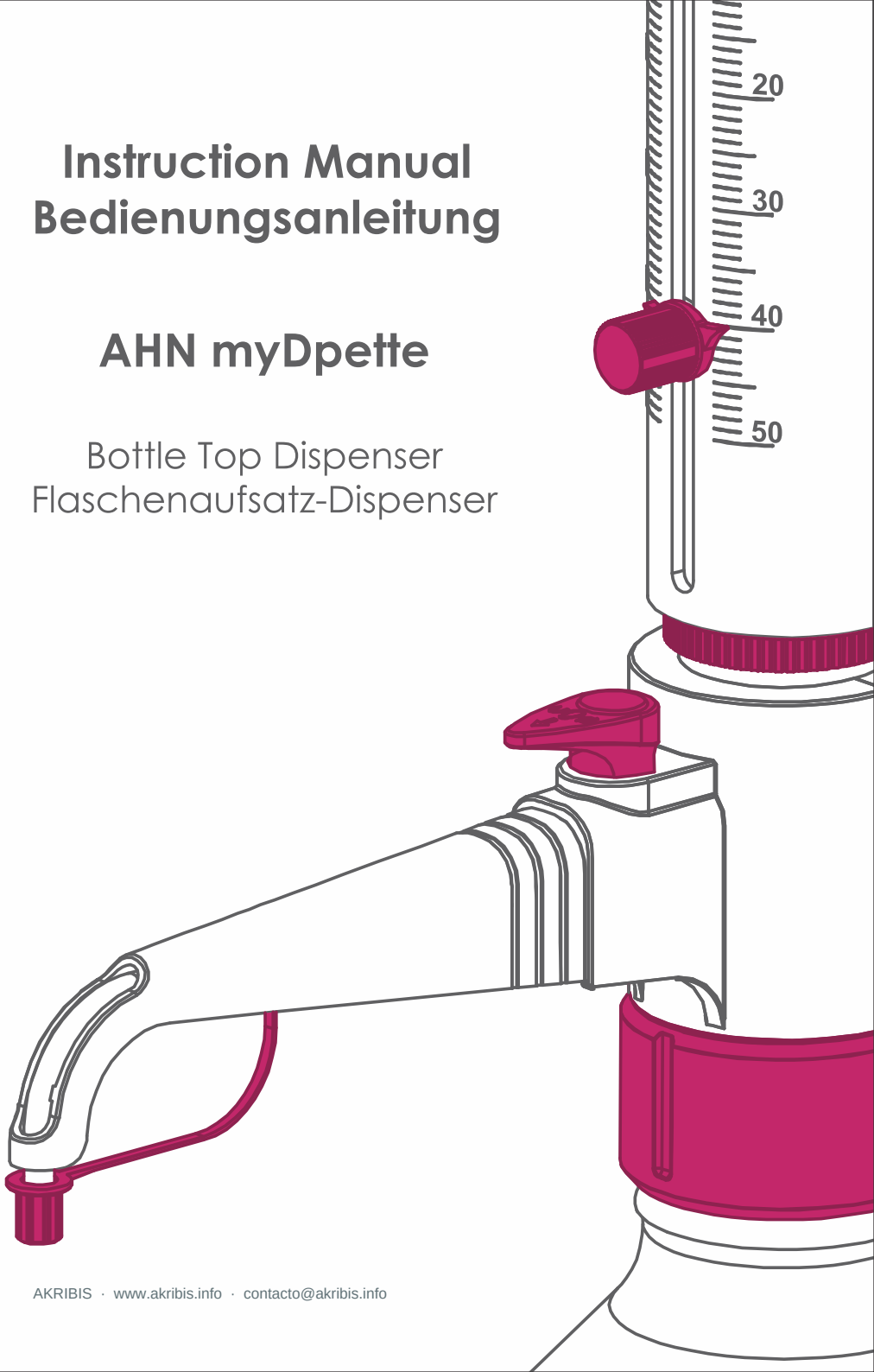
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Instruction Manual
Bedienungsanleitung

AHN myDpette

Bottle Top Dispenser
Flaschenaufsatz-Dispenser



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INSTRUCTION MANUAL

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1. Safety Instructions

Please read the instruction manual carefully before using the dispenser. Although we have tried to cover maximum safety instructions, this manual can not describe all possible safety hazards. It is responsibility of the user to establish their own safety, health practices and determining the applicability of regulatory limitation prior to the usage of dispenser.

Please follow below safety instructions carefully:

- Please understand all the details in manual before you start using instrument.
- Please use protective clothing, eye protection glasses and gloves while working with hazardous liquids.
- Please do not dispense inflammable media into plastic vessels which generates static charge.
- This device is not suitable for the below solutions.

  Concentrated (Hydrochloric Acid, Fluorinated Hydrocarbons, Saline Solutions, Nitric Acid), Highly Concentrated Alkaline Solution and Crystallizing Solution.

  The liquids attacking FEP, PFA, PTFE, Borosilicate Glass, Al_2O_3, Organic Solvents, Trifluoroacetic Acid, Explosive liquids, Fuming Acids, Tetrahydrofuran, Suspension (e.g. of charcoal) as solid particles.
- Please handle the dispenser carefully to avoid any accident during usage.
- The nozzle should always point away from the user while dispensing. Avoid splashes.
- Always use suitable vessels for dispensing liquids.
- Never push down the piston while nozzle cap is on.
- It is recommended to clean the discharge tube regularly.
- Please do not give excess pressure while aspirating or dispensing. The glass tube may break inside. Please follow trouble shooting guide if you find any difficulty in moving the piston up and down.
- Please use original accessories to avoid any kind of accidents.

2. Intended Use

Bottle top dispensers are generally used for dispensing of small volumes of liquid, repetitively and safely from a liquid bottle.

Our dispensers are made up of high grade engineering plastics like PFA, FEP, PTFE etc. which ensures high performance and adaptability to use more liquids.

In addition to ensure high accuracy, true bore glass cylinder is used in the dispenser.

These dispensers can be easily cleaned. It's lower part is also autoclavable to avoid contamination.

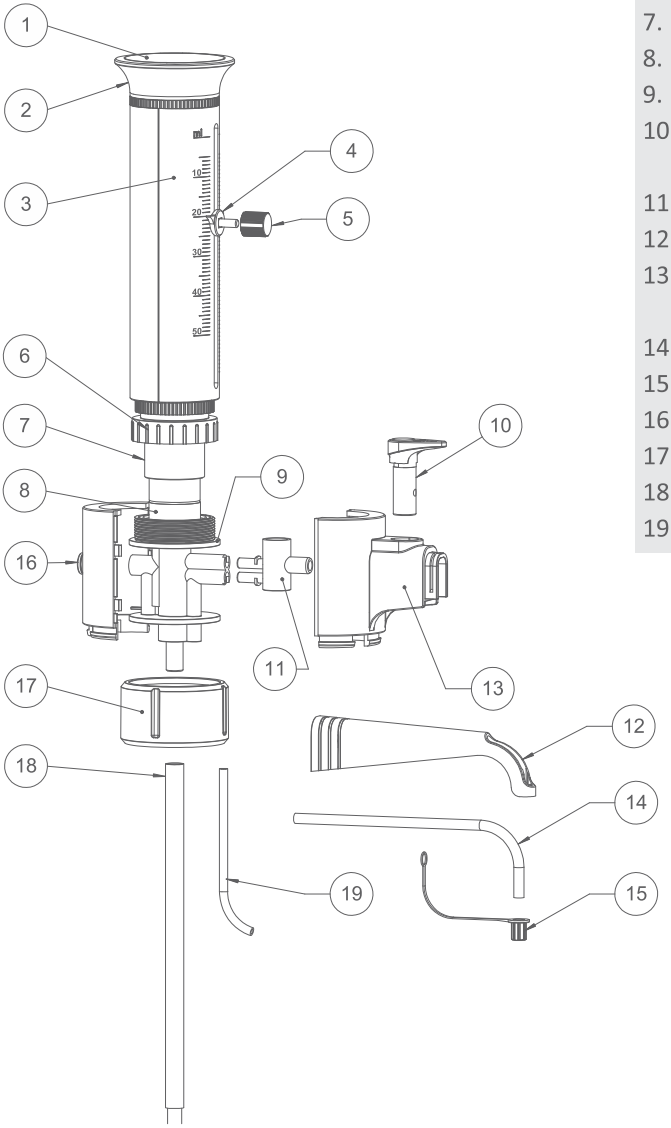
2.1 Functions

This instrument is designed for dispensing liquids observing the following limits.

- +15°C to 40 °C (59 °F to 104 °F) instrument and reagent.
- Vapor pressure upto 500 mbar.
- Density upto 2.2 g/cm
- Kinematic viscocity upto 500 mm /sec.

  (dynamic viscosity [mPas]=Kinematic Viscosity [mm^2 /s] x Density [g/cm^3])

3. Overview



1. Cap
2. Head
3. Main Body
4. Pointer
5. Volume Knob
6. Cylinder Sleeve
7. Cylinder
8. Piston
9. Main Valve
10. Valve Piston
    Recirculation Valve
11. Recirculation Valve
12. Spout
13. Front Cover
    With Recirculation
14. Nozzle
15. Nozzle Cap
16. Air Plug
17. Adapter
18. Telescopic Filling Tube
19. Recirculation Tube

4. Package Inclusions

The bottle top dispenser package includes following :

- Bottle top dispenser - 1
- Telescopic filling tube - 1
- Recirculation tube - 1
- Bottle adapters - 4 (Thread sizes : 28, 38, 40 & 45mm)
- Calibration tool - 1
- User manual
- Certificate of conformity / Calibration report
- Warranty card

5. Assembly

1. Mounting the telescopic filling tube/recirculation tube

Adjust length of the telescoping filling tube to the bottle height and attach it carefully in center. If dispenser with recirculation valve mechanism is used, the optional recirculation tube should also be installed. Insert it with opening pointing outward (Fig. 1).

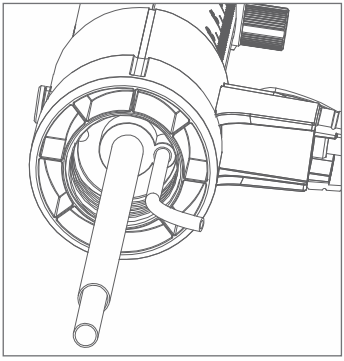


Fig.1

2. Mounting the dispenser on a bottle

Screw the dispenser (GL 32 threads) onto the reagent bottle and ensure to tighten it properly. It is preferable to align the nozzle with graduation mark on main body.

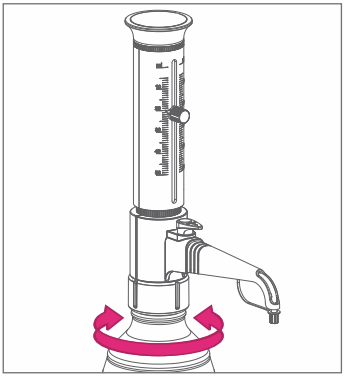


Fig.2

Note : For bottles with other thread sizes, select a suitable adapter.

The adapters supplied with the dispenser are made of polypropylene (PP), and can only be used for media which do not attack PP.

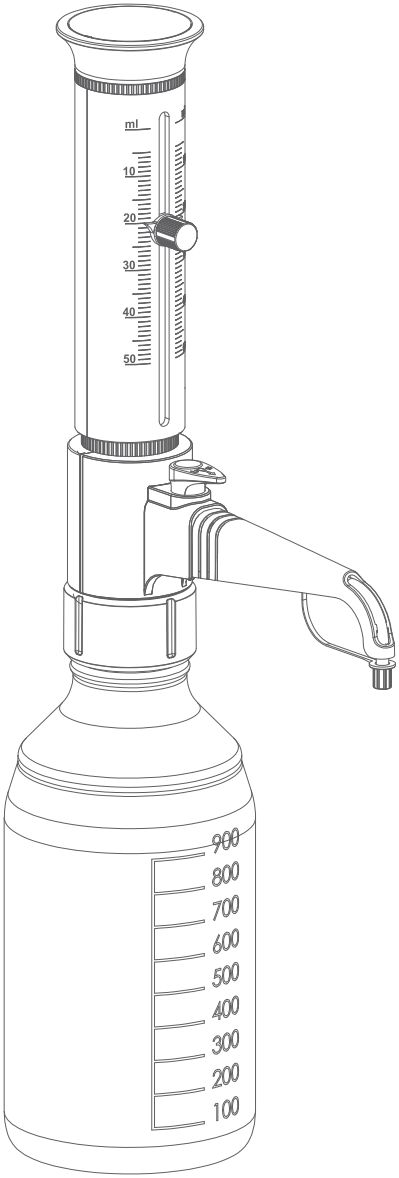


Fig.3

WARNING

Always wear protective gloves when touching the dispenser or the bottle, especially when using dangerous liquids. When mounted to a reagent bottle, always carry the dispenser as shown in Fig.3

6. Priming

6.1 Bottle Top Dispenser with recirculation valve mechanism

WARNING

The nozzle should always point away from the user. Please ensure one should never press down the piston when the nozzle cap is mounted. Avoid splashing.

Please follow below steps for priming

1. Adjust the knob to recirculation mode. (Fig.5)
2. Slowly pull up the piston and push it down rapidly till the end. Repeat this process until air bubbles disappear from the cylinder. (Fig.6)
3. Readjust the knob to dispense.

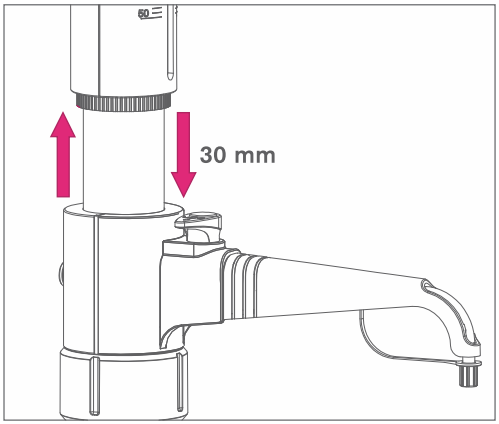


Fig.6

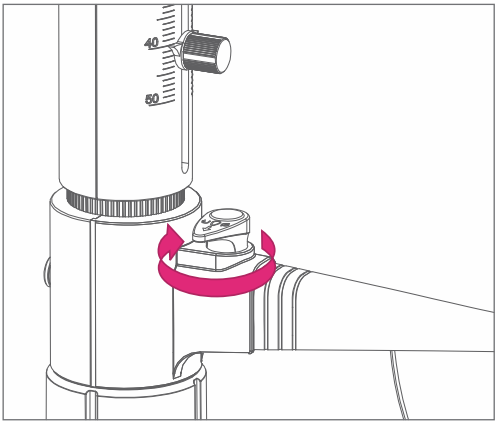


Fig.5

7. Operating Instructions

7.1 Volume Setting

Please follow below steps for volume setting:

1) Turn the volume setting knob in anti clockwise direction.
2) Adjust the knob to desired volume by moving it up or down.
3) Match the pointer with the graduation mark and tighten the knob in clock wise direction.

Now your dispenser is ready to work at your desired set volume. (Fig.8)

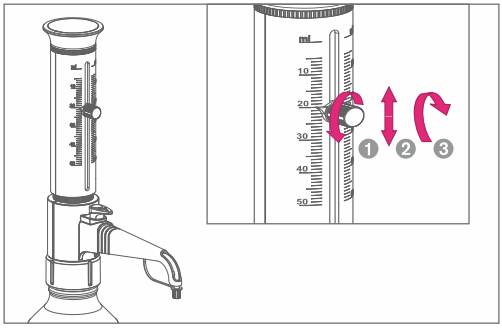


Fig.8

7.2 Dispensing

WARNING

Please follow all safety instructions before you start.

Please follow below steps for dispensing liquids:

1. Please follow priming process before you start (as shown in 6.Priming).
2. Turn the knob to dispensing.
3. Keep a vessel below the nozzle.
4. Set your desired volume (as shown in 7.1 Volume setting).
5. Gently pull the piston until the upper stop and then push down the piston until lower stop.
6. Touch the nozzle against the inner wall of the receiving vessel. Repeat this process as per number of dispensing cycles required.
7. Close the nozzle cap to the nozzle.

Note : Do not give excess force while pushing down the piston. If you feel the piston is jammed, please follow trouble shooting guide (12).

Before you fix the nozzle cap, please ensure that the piston is at lower stop.

One can observe slight sound during aspirating the liquid and on shaking the dispenser as a result of ball design.

8. Cleaning

Please make sure to clean the dispenser regularly for it's smooth functioning.
In following conditions, cleaning must be done.

- When the piston is stuck inside the glass tube
- Before changing of reagents
- Before longer downtime
- Before autoclaving process
- Before any maintenance

Please make sure to wear suitable eye protection glasses and protective clothing.

Please follow below steps for cleaning:

1. Completely dispense out the liquid present inside the dispenser.
2. Mount the dispenser on a bottle filled with deionized water or any other suitable cleaning agent and rinse the dispenser several times.
3. Pull off the telescopic tube and recirculation tube and clean it with the deionized water.
4. In case of recirculation, change the knob position to recirculation mode. Again rinse the dispenser for several times.

Please follow below steps to clean the piston and glass barrel:

This procedure must be followed if the piston is difficult to move or if dispenser is to be autoclaved.

1. Unscrew the head as shown in Fig. 9
2. Take out the piston completely as shown in Fig. 10
   Clean the piston & glass barrel and put them back in their original position and screw back the head

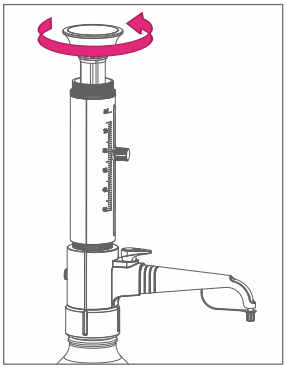


Fig. 9

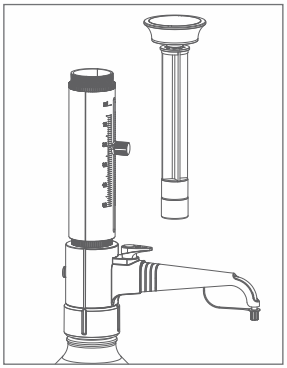


Fig. 10

9. Error Limits

Error limits related to the nominal capacity (= maximum volume) indicated on the instrument, are obtained when instrument and distilled water are equilibrated at ambient temperature (20°C/68°F). The calibration process is performed as per the EN ISO 8655-6 standard with a completely assembled instrument and uniform dispensing.

Volume (ml)	Increment (ml)	Inaccuracy (±) %		Imprecision (±) %	
		± %	± ml	± %	± ml
0.25 - 2.5	0.05	0.6	0.015	0.2	0.005
0.5 - 5	0.1	0.5	0.025	0.2	0.01
1 - 10	0.2	0.5	0.05	0.2	0.02
2.5 - 25	0.5	0.5	0.125	0.2	0.05
5 - 50	1.0	0.5	0.25	0.2	0.1
10 - 100	2.0	0.5	0.5	0.2	0.2

* The specifications (inaccuracy and imprecision) are decided on the basis of EN ISO 8655-5 standard.

10. Calibration

⚠ **WARNING**

During calibration process one has to take the reading at lowest volume first, ensure not to move the body before you close the cap and then proceed to the medium and high volume.

Calibration check

Please follow complete calibration procedure given in EN ISO 8655-5 manual like environment conditions, water, weighing balance etc.

Volume adjustment

Please follow below steps to calibrate the bottle top dispenser if there is a variation in the desired volume and actual volume:

1. Open the cap with calibration tool as shown in Fig. 11
2. Insert the hex tool on hex nut as shown in Fig. 12
3. Rotate the hex tool in clockwise direction to decrease the volume, rotate the hex tool in anti clockwise direction to increase the volume.
4. Take out the hex tool and close the cap.

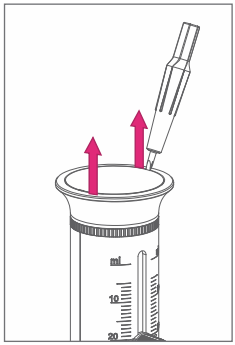


Fig. 11

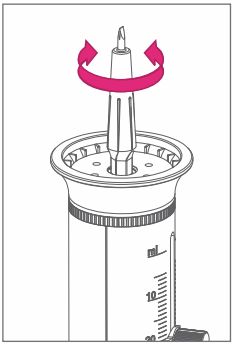


Fig. 12

11. Autoclaving

This dispenser is autoclavable in following conditions.

Temperature:	120°C / 250° Fahrenheit
Pressure:	1.05 bar / 15 psi (pounds)
Time:	20 minutes or less

WARNING

Exceeding the above conditions will damage the parts.

Please follow below steps to autoclave the dispenser:

1. Clean the dispenser thoroughly as described in cleaning section before you start autoclaving.
2. Take out following parts :
   a) Pull out the piston by unscrewing the head
   b) Pull off the nozzle cap and telescopic filling tube
3. Autoclave all the parts as per above procedure.
4. Cool down the parts for atleast 8 hours in room temperature and then reassemble the parts.
5. Now the dispenser is ready to be used.

It is recommended to do quick calibration check.

12. Troubleshooting

Troubleshooting		
Issue	**Possible root cause**	**Corrective action**
Piston jam	Formation of crystals or dirt accumulation	Immediately stop dispensing. Do not give extra force to dispense the liquid. Follow cleaning procedure. (8.cleaning)
Liquid filling / dispensing issue	Valve piston contaminated or dirt accumulation	Follow cleaning procedure (8.cleaning)
Air bubble in the dispenser	Liquid with high vapor pressure has been drawn in too quickly	Try to draw the liquid slowly
	Priming issue	Prime the instrument
	Fitting of telescopic filling tube is loose	Connect the tube firmly
	Recirculation tube fitting is loose	Connect the recirculation tube firmly
Leakage	Recirculation tube is not connected	Connect the recirculation tube

13. Chemical Compatibility Chart

Storage Conditions

Store the instrument and accessories only in clean conditions in a cool and dry place.

Chemical Compatibility Table

Chemicals from A to Z

The following list includes most frequently used chemicals.

It provides useful information for the safe and adequate use of the Dispenser. However, safety precautions and recommendations in operating instructions must be followed carefully.

Code explanations

A = Good resistance
B = Acceptable with limitations
C = Not recommended
1 = Acid vapours (better resistance with lower concentration).
Rinse the instrument in the rinse mode otherwise do not leave instrument on bottle.
2 = Risk of damage, softening or discoloration of external parts through vapours.
Rinse the instrument in the rinse mode otherwise do not leave instrument on bottle.
3 = Chemical degradation of glass parts (plunger / barrel).

Chemicals A - Z

A	
Acetaldehyde	A
Acetic acid (glacial), 100%	B/2
Acetic acid, 96%	A
Acetic anhydride	B/2
Acetone(Propanone)	B/2
Acetonitrile (MECN)	A
Acetophenone	B/2
Acetyl chloride	B/2
Acetylacetone	A
Acrylic acid	A
Acrylonitrile	B/2
Adipic acid	A
Allyl alcohol	A
Aluminium chloride	A
Amino acids	A
Ammonia, 20%	B/2
Ammonia, 20-30%	B/2
Ammonium chloride	A
Ammonium fluoride	A
Ammonium molybdate	A
Ammonium sulfate	A
n-Amyl acetate	B/2
Amyl alcohol (Pentanol)	A
Amyl chloride (Chloropentane)	B/2
Aniline	A
Ascorbic acid	A
B	
Barium chloride	A
Benzaldehyde	A
Benzene	B/2
Benzine (Petroleum benzine) - bp 70-180 °C	A
Benzoyl chloride	B/2
Benzyl alcohol	A
Benzyl amine	A
Benzyl Chloride	B/2
Bis (2-ethylhexyl) phthalate	B/2
Boric acid, 10%	A
Bromine	C/2
Bromobenzene	B/2
Bromonaphthalene	A
Butanediol	A
Butanol	A
Butyl acetate	B/2
Butyl methyl ether	B/2
Butylamine	B/2
Butyric acid	B/2

C	
Calcium carbonate	A
Calcium chloride	A
Calcium hydroxide	A
Calcium hypochlorite	A
Carbon disulfide	B/2
Carbon tetrachloride	B/2
Chlorine dioxide	B/2
Chlorine water	B/2
Chloro naphthalene	B/2
Chloroacetaldehyde, ≤45%	A
Chloroacetic acid	A
Chloroacetone	B/2
Chlorobenzene	B/2
Chlorobutane	B/2
Chloroethanol	B/2
Chloroform (Trichloromethane)	B/2
Nitro-hydrochloric acid (Aqua regia)	B/2
Chlorosulfonic acid	B/2
Chlorosulfuric acid 100%	B/1/2
Chromic acid, 100%	B/1/2
Chromosulfuric acid	C/1/2
Citric acid	A
Copper fluoride	A
Copper sulfate	A
Covi-Ox-T70/Mixed Tocopherol	A
Cresol	A
Cumene (Isopropyl benzene)	B/2
Cyanoacrylate	A
Cyclohexane	B/2
Cyclohexanone	B/2
Cyclopentane	B/2
D	
Decane	A
Di-(2-ethylhexyl) peroxydicardonate	B/2
1-Decanol	A
Dibenzyl ether	B/2
Dichloroacetic acid	A
Dichlorobenzene	A
Dichloroethane	A
Dichloroethylene	B/2
Dichloromethane	B/1
Diesel oil (Heating oil), bp 250-350°C	A
Diethanolamine	A
Diethylether	B/2
Diethylamine	B/2
1,2 Diethyl benzene	B/2
Diethylene glycol	A

Recommended Reagents

D	
Dimethylacetamide	A
Dimethyl sulfoxide (DMSO)	B/2
Dimethylaniline	A
Dimethylformamide (DMF)	B/2
1,4 Dioxane (Diethylene dioxide)	B/2
Diphenyl ether	A
E	
Essential oil	A
Ethanol	A
Ethanolamine	B/2
Ether	B/2
Ethyl acetate	B/2
Ethylbenzene	B/2
Ethylene chloride	B/2
Ethylene diamine	A
Ethylene glycol	A
F	
Fluoro acetic acid	B/2
Formaldehyde, ≤40% (Formalin)	A
Formamide	A
Formic acid, ≤100%	A
G	
Gamma-butyrolactone	A
Gasoline	B/2
Glycerin ≤40%	A
Glycerol	A
Glycol (Ethylene glycol)	A
Glycolic acid, ≤50%	A
H	
Heating oil (Diesel oil), bp 250-350°C	A
Heptane	A
Hexane	A
Hexanoic acid	A
Hexanol	A
Hydriodic acid, ≤57%	B/2
Hydrobromic acid	A
Hydrochloric acid, ≤20%	A
Hydrochloric acid, 20-37%	B/1
Hydrofluoric acid (HF)	C/3
Hydrogen peroxide	A
I	
Iodine	A
Iodine bromide	C/2
Iodine chloride	C/2
Isoamyl alcohol	A
Isobutanol	A

I	
Isooctane	A
Isopropanol (2-Propanol)	A
Isopropyl ether	B/2
Iso-propylamine	B/2
K	
Kerosene	A
L	
Lactic acid	A
M	
2-Methoxyethanol	A
Methanol	A
Methoxybenzene (Anisol)	B/2
Methyl benzoate	B/2
Methyl tert butyl ether	B/2
Methyl ethyl ketone (MEK/Butanone)	B/2
Methyl formate	A
Methyl iodide (Iodomethane)	B/2
Methyl methacrylate (MMA)	B/2
Methyl propyl ketone (2-Pentanone)	A
Methylene chloride (Chloromethane)	B/2
Methylene chloride - (Dichloromethane) (DCM)	B/2
Methylpentanone	A
Mineral oil (Engine oil)	A
Monochloroacetic acid	A
N	
Nitric acid 100%	C/3
Nitric acid, 30-70%	B/2
Nitric acid dil, <30%	B/2
Nitrobenzene	B/2
Nitromethane	B/2
N-methyl-2-pyrrolidone (NMP)	A
O	
Oleic acid	A
Oxalic acid	A
Octane	A
Octanol	A
Oil (Vegetable, Animal)	B/2
Oil of turpentine	B/2
Oleum (Fuming sulfuric acid)	A
P	
Pentane	B/2
Peracetic acid	A
Perchloric acid 100%	B/2
Perchloric acid diluted	A
Perchloroethylene	B/2
Petroleum	B/2

Recommended Reagents

P	
Petroleum ether, spirit	B/2
Phenol	A
Phenylethanol	B/2
Phenylhydrazine	B/2
Phosphoric acid 100%	A
Phosphoric acid, ≤85%	A
Piperidine	B/2
Potassium chloride	A
Potassium dichromate	A
Potassium dihydrogen phosphate	A
Potassium hydroxide	A
Potassium iodide	A
Potassium permanganate (persulfate)	A
Potassium peroxydisulfate	A
Potassium sulfate	A
Propionic acid (Propanoic acid)	A
Propylene glycol (Propane-1,2-diol)	A
Propylene oxide	A
Picric acid (Trinitrophenol)	B/2
Pyridine	B/2
Pyruvic acid	A
R	
Resorcin	A
S	
Salicylaldehyde	A
Scintilation fluid	A
Silver acetate	A
Silver nitrate	A
Sodium acetate	A
Sodium chloride	A
Sodium dichromate	A
Sodium fluoride	A
Sodium hydroxide, ≤30%	A
Sodium hypochlorite	A
Sodium thiosulfate	A

S	
Sulfonitric acid 100%	B/2
Sulfur dioxide	B/2
Sulfuric acid 100%	B/2
Sulfuric acid <10%	A
Sulfuric acid (10-75%)	B/1
Sulfuric acid (Cold conc.)	A
Sulfuric acid (Hot conc.)	B/2
T	
Tartaric acid	A
Tetrachloroethylene	B/2
Tetramethylammonium hydroxide	A
Toluene	B/2
Trichlorethylene	B/2
Trichloroacetic acid	B/2
Trichlorobenzene	B/2
Trichloroethane	B/2
Triethanolamine	A
Triethylamine	A
Trichloroethylene	B/2
Trichlorotrifluoro ethane	B/2
Triethanolamine	A
Triethylene glycol	A
Trifluoromethane (Fluoroform)	B/2
Trifluoro ethane	B/2
Trifluoroacetic anhydride (TFAA)	B/2
Turpentine	A
U	
Urea	A
X	
Xylene	B/2
Z	
Zinc chloride, ≤10%	A
Zinc sulfate, ≤10%	A

⚠ CAUTION:

Always follow instructions in the operating manual of the dispenser as well as the reagent manufacturer's specifications. In addition to these chemicals, a variety of organic and inorganic saline solutions (e.g., biological buffers), biological detergents and media for cell culture can be dispensed. If used with strong acids, it is advised to rinse & remove dispenser at the end of every working day & store it safely. If require information on chemicals not listed, please contact us.

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