

Dispensette® TA Trace Analysis

For dispensing high-purity chemicals

The Dispensette® TA provides outstanding performance for precise-volume dispensing of high-purity media for trace analysis. The Dispensette® TA is also suitable for dispensing HF (platinum iridium model.)

The components of the fluid path have been selected to only contain the highest purity materials, such as fluoroplastics and sapphire. Depending on application, either platinum-iridium or tantalum valve springs can be chosen. The volume range is from 1 to 10mL.

- Especially well suited for dispensing acids, bases and hydrogen peroxide (TA models only).
- Trace metal content of dispensed liquid is generally in the low ppb range, or, depending on application, even in the low ppt range.

Dispensing of high-purity chemicals in trace analysis

- Plastics in contact with media consist of high-purity materials such as PTFE, ETFE, FEP, and PFA. The purest sapphire is used for replaceable valves. Depending on the application, platinum-iridium or tantalum are available as spring materials.
- A field-tested cleaning process before use in trace analysis is described in the operating manual.
- Easy to disassemble for replacement of the dispensing cartridge.

Recommended Application Range

Dispensing Medium	Valve spring: Pt-Ir	Valve spring: Ta
Acetic acid	+	+
Ammonia solution	+	+
Bromine	+	+
Hydrochloric acid	+	+
Hydrofluoric acid	+	-
Hydrogen peroxide	-	+
Nitric acid	+	+
Perchloric acid	+	+
Sodium hydroxide, 30%	+	-
Sulfuric acid	+	+
Water	+	+

+ suitable – not suitable

* Hydrofluoric acid reacts slightly with sapphire resulting in mildly elevated aluminum values. To reduce these values we recommend discarding 3-5 dispensings of 2 ml each before performing the analysis.

The above recommendations reflect testing completed prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. Should you require information on chemicals not listed, please feel free to contact BrandTech®.
Status as of: 0713/2

Performing Trace Analysis?

See the VITLAB® PFA trace analysis labware on page 110.



BRAND

Replaceable dispensing cartridge

Serialized with certificate

SafetyPrime™

Recirculation Valve

Discharge Tube

Screw Cap

Recirculation Tube

Volume Adjustment

Safety Ring

Valve Block

Telescoping Filling Tube

Technical data

The high-purity materials release virtually no metal ions after appropriate cleaning. This makes the Dispensette® TA bottle-top dispenser a superior choice for trace analysis.

Replaceable Dispensing Cartridge

If the piston seal is worn after a long period of use, the entire dispensing cartridge can easily be replaced without tools by the user. The

cartridge is fully adjusted at the factory and delivered with a performance certificate. No calibration is required after replacement.

Serial Dispensing

For easy serial dispensing, an optional flexible discharge tube with textured safety handle (not approved for HF) permits fast and precise dispensing, even into narrow

test tubes. Full functionality of the SafetyPrime™ recirculation valve and the safety discharge system is maintained after installation.

Areas of application / Suggested dispenser (as of July 2013)

■ Dispensette® III(Disp. III) ■ Dispensette® Organic (Disp. Organic)

Reagent	Disp. III	Disp. Organic	Reagent	Disp. III	Disp. Organic	Reagent	Disp. III	Disp. Organic
Acetaldehyde	+	+	Cyclohexane	+	+	Mineral oil (Engine oil)	+	+
Acetic acid (glacial), 100%	+	+	Cyclohexanone	+	+	Monochloroacetic acid	+	+
Acetic acid, 96%	+	+	Cyclopentane	+	+	Nitric acid, 30%	+	+
Acetic anhydride	+	+	Decane	+	+	Nitric acid, 30-70% *	+	+
Acetone	+	+	1-Decanol	+	+	Nitrobenzene	+	+
Acetonitrile	+	+	Dibenzyl ether	+	+	Oleic acid	+	+
Acetophenone	+	+	Dichloroacetic acid	+	+	Oxalic acid	+	+
Acetyl chloride	+	+	Dichlorobenzene	+	+	n-Pentane	+	+
Acetylacetone	+	+	Dichloroethane	+	+	Peracetic acid	+	+
Acrylic acid	+	+	Dichloroethylene	+	+	Perchloric acid	+	+
Acrylonitrile	+	+	Dichloromethane	+	+	Perchloroethylene	+	+
Adipic acid	+	+	Diesel oil (Heating oil), bp 250-350 °C)	+	+	Petroleum, bp 180-220°C	+	+
Allyl alcohol	+	+	Diethanolamine	+	+	Petroleum ether, bp 40-70°C	+	+
Aluminium chloride	+	+	Diethyl ether	+	+	Phenol	+	+
Amino acids	+	+	Diethylamine	+	+	Phenylethanol	+	+
Ammonia, 20%	+	+	1,2 Diethylbenzene	+	+	Phenylhydrazine	+	+
Ammonia, 20-30%	+	+	Diethylene glycol	+	+	Phosphoric acid, 85%	+	+
Ammonium chloride	+	+	Dimethyl sulfoxide (DMSO)	+	+	Phosphoric acid, 85% + Sulfuric acid, 98%, 1:1	+	+
Ammonium fluoride	+	+	Dimethylaniline	+	+	Piperidine	+	+
Ammonium sulfate	+	+	Dimethylformamide (DMF)	+	+	Potassium chloride	+	+
n-Amyl acetate	+	+	1,4 Dioxane	+	+	Potassium dichromate	+	+
Amyl alcohol (Pentanol)	+	+	Diphenyl ether	+	+	Potassium hydroxide	+	+
Amyl chloride (Chloropentane)	+	+	Essential Oil	+	+	Potassium permanganate	+	+
Aniline	+	+	Ethanol	+	+	Propionic acid	+	+
Barium chloride	+	+	Ethanolamine	+	+	Propylene glycol (Propanediol)	+	+
Benzaldehyde	+	+	Ethyl acetate	+	+	Pyridine	+	+
Benzene (Benzol)	+	+	Ethylbenzene	+	+	Pyruvic acid	+	+
Benzine (Petroleum benzin), bp 70-180 °C	+	+	Ethylene chloride	+	+	Salicylaldehyde	+	+
Benzoyl chloride	+	+	Fluoroacetic acid	+	+	Scintillation fluid	+	+
Benzyl alcohol	+	+	Formaldehyde, 40%	+	+	Silver acetate	+	+
Benzylamine	+	+	Formamide	+	+	Silver nitrate	+	+
Benzylchloride	+	+	Formic acid, 100%	+	+	Sodium acetate	+	+
Boric acid, 10%	+	+	Glycerol	+	+	Sodium chloride	+	+
Bromobenzene	+	+	Glycol (Ethylene glycol)	+	+	Sodium dichromate	+	+
Bromonaphthalene	+	+	Glycolic acid, 50%	+	+	Sodium fluoride	+	+
Butanediol	+	+	Heating oil (Diesel oil), bp 250-350°C	+	+	Sodium hydroxide, 30%	+	+
1-Butanol	+	+	Heptane	+	+	Sodium hypochlorite	+	+
n-Butyl acetate	+	+	Hexane	+	+	Sulfuric acid, 98%	+	+
Butyl methyl ether	+	+	Hexanoic acid	+	+	Tartaric acid	+	+
Butylamine	+	+	Hexanol	+	+	Tetrachloroethylene	+	+
Butyric acid	+	+	Hydriodic acid	+	+	Tetrahydrofuran (THF) */ **	+	+
Calcium carbonate	+	+	Hydrobromic acid	+	+	Tetramethylammonium hydroxide	+	+
Calcium chloride	+	+	Hydrochloric acid, 20%	+	+	Toluene	+	+
Calcium hydroxide	+	+	Hydrochloric acid, 20-37%	+	+	Trichloroacetic acid	+	+
Calcium hypochlorite	+	+	Hydrogen peroxide, 35%	+	+	Trichlorobenzene	+	+
Carbon tetrachloride	+	+	Isoamyl alcohol	+	+	Trichloroethane	+	+
Chloro naphthalene	+	+	Isobutanol	+	+	Trichloroethylene	+	+
Chloroacetaldehyde, 45%	+	+	Isooctane	+	+	Trichlorotrifluoro ethane	+	+
Chloroacetic acid	+	+	Isopropanol (2-Propanol)	+	+	Triethanolamine	+	+
Chloroacetone	+	+	Isopropyl ether	+	+	Triethylene glycol	+	+
Chlorobenzene	+	+	Lactic acid	+	+	Trifluoro ethane	+	+
Chlorobutane	+	+	Methanol	+	+	Trifluoroacetic acid (TFA)	+	+
Chloroform	+	+	Methoxybenzene	+	+	Turpentine	+	+
Chlorosulfonic acid	+	+	Methyl benzoate	+	+	Urea	+	+
Chromic acid, 50%	+	+	Methyl butyl ether	+	+	Xylene	+	+
Chromosulfuric acid	+	+	Methyl ethyl ketone	+	+	Zinc chloride, 10%	+	+
Copper sulfate	+	+	Methyl formate	+	+	Zinc sulfate, 10%	+	+
Cresol	+	+	Methyl propyl ketone	+	+			
Cumene (Isopropyl benzene)	+	+	Methylene chloride	+	+			

* use ETFE/PTFE bottle adapter

** use PTFE seal

The above recommendations reflect testing completed prior to publication. Always follow instructions in the operating manual of the instrument 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. Should you require information on chemicals not listed, please feel free to contact BrandTech Scientific. Status as of: 07/13/12

Dispensette® TA Pt-Ir

For dispensing HF, we recommend the use of the Dispensette® TA bottle-top dispenser with platinum-iridium valve spring (Cat. No. 4741041, page 37).

Dispensette® bottle top dispensers technical data

Operating limitations (all instruments)

Liquids which form deposits may make the piston difficult to move or may cause jamming (e.g., crystallizing solutions or concentrated alkaline solutions).

When dispensing inflammable media, make sure to avoid the buildup of static charge, e.g., do not dispense into plastic vessels; do not wipe instruments with a dry cloth.

The Dispensette® is designed for general laboratory applications and complies with the relevant standards, e.g., DIN EN ISO 8655. Compatibility of the instrument for a specific application (e.g., trace material analysis, food sector, etc.) must be checked by the user. Approvals for specific applications, e.g., for production and administration of food, pharmaceuticals and cosmetics are not available.

Items supplied

Each Dispensette® III, Dispensette® Organic, Dispensette® TA includes:

- Certificate of performance
- Discharge tube
- Valve Mounting/Calibration tool
- Adapters and filling tube
- Operating manual
- One-year warranty

Supplied Adapters and Filling Tubes

Nominal Volume, mL	Adapter for bottle thread, mm	Filling tube length, mm
For Dispensette® III and Dispensette® Organic (PP)		
0.5	24, 28, 33, 38	125-240
1, 2, 5, 10	28, 33, 38	125-240
25, 50, 100	33, 38	170-330
For Dispensette® TA		
10	28, 33, S 40	125-240

Limitations of use (all instruments)

This instrument is designed for dispensing liquids, observing the following physical limits:

- use between +15°C and +40°C (59°F and 104°F) of instrument and reagent
- vapor pressure up to max. 600mbar. Aspirate slowly above 300mbar, in order to prevent the liquid from boiling
- kinematic viscosity up to 500mm²/s (dynamic viscosity [mPas] = kinematic viscosity [mm²/s] x density [g/cm³])
- density: Dispensette® III/Dispensette® Organic: up to 2.2g/cm³ and Dispensette® TA up to 3.8g/cm³

Operating Exclusions – Dispensette® III

Never use the Dispensette® III with:

- liquids attacking Al₂O₃-ceramic, ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- liquids attacking borosilicate glass (e.g., hydrofluoric acid)
- liquids which are decomposed catalytically by platinum-iridium (e.g., H₂O₂)
- hydrochloric acid > 20% and nitric acid > 30%
- tetrahydrofuran
- trifluoroacetic acid
- explosive liquids (e.g., carbon disulfide)
- suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument
- liquids attacking PP (screw cap)

Operating Exclusions – Dispensette® Organic

Never use the Dispensette® Organic with:

- liquids attacking Al₂O₃-ceramic, tantalum, ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- liquids attacking borosilicate glass (e.g., hydrofluoric acid)
- bases and saline solutions
- explosive liquids (e.g., carbon disulfide)
- suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument
- liquids attacking PP (screw cap)

Operating limits and exclusions – Dispensette® TA

Never use the Dispensette® TA with:

- liquids attacking Al₂O₃, sapphire or fluoroplastics like ETFE, FEP, PFA and PTFE (e.g., dissolved sodium azide*)
- liquids which are decomposed catalytically by platinum-iridium (e.g., H₂O₂) or tantalum, depending on the construction of the instrument
- organic solvents
- trifluoroacetic acid
- explosive liquids (e.g., carbon disulfide)
- suspensions (e.g., of charcoal) as solid particles may clog or damage the instrument
- The Dispensette®TA must not be autoclaved

*Dissolved sodium azide permitted up to a concentration of max 0.1%

Dispensette® bottle-top dispensers

ORDERING INFORMATION

Dispensette® III						Without SafetyPrime™ valve		With SafetyPrime™ valve	
Volume, mL	Increments, mL	%	A* < ± μL	%	CV* ≤ μL	Cat. No.	2014 List Price	Cat. No.	2014 List Price
Dispensette® III, Digital Easy Calibration™									
0.2-2	0.01	0.5	10	0.1	2	4701320	\$472.00	4701321	\$514.00
0.5-5	0.02	0.5	25	0.1	5	4701330	472.00	4701331	514.00
1-10	0.05	0.5	50	0.1	10	4701340	472.00	4701341	514.00
2.5-25	0.1	0.5	125	0.1	25	4701350	646.00	4701351	682.00
5-50	0.2	0.5	250	0.1	50	4701360	657.00	4701361	693.00
Dispensette® III, Analog-adjustable									
0.05-0.5	0.01	1.0	5	0.2	1	4701100	419.00	4701101	441.00
0.2-2	0.05	0.5	10	0.1	2	4701120	419.00	4701121	441.00
0.5-5	0.1	0.5	25	0.1	5	4701130	419.00	4701131	441.00
1-10	0.2	0.5	50	0.1	10	4701140	419.00	4701141	441.00
2.5-25	0.5	0.5	125	0.1	25	4701150	588.00	4701151	615.00
5-50	1.0	0.5	250	0.1	50	4701160	605.00	4701161	629.00
10-100	1.0	0.5	500	0.1	100	4701170	935.00	4701171	966.00
Dispensette® III, Fixed-volume									
1		0.5	5	0.1	1	4701210	419.00	4701211	441.00
2		0.5	10	0.1	2	4701220	419.00	4701221	441.00
5		0.5	25	0.1	5	4701230	419.00	4701231	441.00
10		0.5	50	0.1	10	4701240	419.00	4701241	441.00
Dispensette® Organic						Without SafetyPrime™ valve		With SafetyPrime™ valve	
Volume, mL	Increments, mL	%	A* < ± μL	%	CV* ≤ μL	Cat. No.	2014 List Price	Cat. No.	2014 List Price
Dispensette® Organic, Digital Easy Calibration™									
0.5-5	0.02	0.5	25	0.1	5	4731330	\$514.00	4731331	\$542.00
1-10	0.05	0.5	50	0.1	10	4731340	514.00	4731341	542.00
2.5-25	0.1	0.5	125	0.1	25	4731350	690.00	4731351	710.00
5-50	0.2	0.5	250	0.1	50	4731360	714.00	4731361	742.00
Dispensette® Organic, Analog-adjustable									
0.5-5	0.1	0.5	25	0.1	5	4731130	462.00	4731131	472.00
1-10	0.2	0.5	50	0.1	10	4731140	462.00	4731141	472.00
2.5-25	0.5	0.5	125	0.1	25	4731150	647.00	4731151	657.00
5-50	1.0	0.5	250	0.1	50	4731160	657.00	4731161	668.00
10-100	1.0	0.5	500	0.1	100	4731170	1015.00	4731171	1035.00

Dispensette® TA						With SafetyPrime™ valve	
Volume, mL	Valve Spring	Subdivision, mL	A* < ± % %	CV* ≤ % μL	%	Cat. No.	2014 List Price
Dispensette® TA, Analog-adjustable							
1-10	Platinum-iridium	0.2	0.5	50	0.1	4741041	\$1090.00
1-10	Tantalum	0.2	0.5	50	0.1	4741241	1090.00

* The value of accuracy and coefficient of variation are final test values referring to the delivered nominal volume, instrument and distilled water at equilibrium with ambient temperature (20°C/68°F) and with smooth operation.

A*=Accuracy, CV*=Coefficient of Variation



Dispensette® III Digital Easy Calibration™



Dispensette® Organic Digital Easy Calibration™



Dispensette® TA with Safety Prime™ Valve