



Dispensette® S Trace Analysis

Reliable dispensing in trace analysis

BRAND. For lab. For

- + The efficient solution for dispensing high purity media in trace analysis
- + Trace metal content generally below the detectability threshold
- + Also suitable for hydrofluoric acid

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Get to know the Dispensette® S Trace Analysis

The Dispensette® S Trace Analysis bottle-top dispenser makes the dispensing of acids and bases in trace analysis safe and efficient. Since avoiding contamination is important in these applications, the Dispensette® S Trace Analysis is composed of high-purity materials that do not emit metal ions. No results are found above the detectability threshold in ICP-MS analyses*. The parts that come into contact are made of high-purity materials such as PTFE, ETFE, PCTFE, FEP, and PFA. Pure sapphire is used for the exchangeable valves. Depending on the requirements, platinum-iridium or tantalum are available as spring materials.

For easy operation, the volume setting quickly engages through the internal toothed bar and is securely fixed. All

valves function without additional sealing rings. This makes cleaning easier. The discharge tube is easy to attach and optionally available with or without a recirculation valve. If contamination of the bottle contents is to be avoided when these are used in trace analysis, we recommend using the device without a recirculation valve.

The complete dispensing cartridge can be easily replaced by the user without tools. The dispensing cartridge with safety ring is supplied from BRAND calibrated and comes with a quality certificate; therefore, no calibration after replacement is necessary.



Dispensette® S
Trace Analysis

- + Dispensing of media in the volume range from 1 to 10 ml.
- + Dispensing hydrofluoric acid no problem with the platinum-iridium valve spring.
- + Volume selection with interior scalloped track

A Closer Look: The benefits of Dispensette® S Trace Analysis

The Dispensette® S Trace Analysis bottle-top dispenser is designed for use in trace analysis. Innovative technology makes dispensing simple, easy, and efficient.

Calibration mechanism

Adjust within seconds to test and monitor instrument according to ISO 9001 and GLP

Discharge valve with safety ball

closes when discharge tube is not mounted

Discharge tube

with recirculation valve

Large viewport

Large sight opening enables inspection of media

Hinged screw cap

doesn't get in the way when dispensing

Piston seat

Volume selection

using interior scalloped track

Safety ring

360° rotating valve block

the bottle label always faces the user for safety

Olive-shaped filling valve

for firmer attachment of the filling tube

Recirculation tube

for discharge tubes with recirculation valve

Telescoping filling tube

adjusts to different bottle sizes

Replaceable dispensing cartridge

with certificate



Trusted technology

- + A field-tested cleaning process before use in trace analysis is described in the operating manual.
- + Parts in contact with media consist of high-purity materials such as PTFE, ETFE, PCTFE, FEP and PFA. The purest sapphire is used for replaceable valves. Depending on the application, platinum-iridium or tantalum are available as spring materials.
- + If contamination of the bottle contents must be avoided when used in trace analysis, we recommend using the dispenser without recirculation valve.
- + The 45 mm standard thread plus the included adapters fit common lab bottles
- + Easy disassembly for replacement of the dispensing cartridge
- + DE-M marking

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	+	+
Phosphoric 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 BRAND. Status as of: 0815/2



Simple-to-mount discharge tube



Positive volume setting using interior scalloped track



Valve system designed without seals



Easy replacement of the complete dispensing unit without tools – dispensing unit is fully adjusted.

Ordering Information



Dispensette® S Trace Analysis, Analog-adjustable

Bottle-top dispenser, for threaded bottles GL 45, DE-M marking

Items supplied:

with performance certificate, telescoping filling tube, recirculation tube (optional), mounting tool and bottle adapters GL 28-S 28 (ETFE), GL 32 (ETFE) and S 40 (PTFE).

Capacity ml	Valve spring ml	A* $\leq \pm$ %	μ μ l	CV* $\leq$ %	μ μ l	without recirculation valve Cat. No.	with recirculation valve Cat. No.
1 - 10	Pt-Ir	0.5	50	0.1	10	4640040	4640041
1 - 10	Ta	0.5	50	0.1	10	4640240	4640241

* Calibrated to deliver (TD, Ex). Error limits according to the nominal capacity (= maximum volume) indicated on the instrument, obtained with instrument and distilled water at equilibrium with ambient temperature at 20 °C, and with smooth, steady operation. The error limits are well within the limits of DIN EN ISO 8655-5. DE-M marking. A = Accuracy, CV = Coefficient of variation

Accessories for simple and efficient work



Flexible discharge tube with recirculation valve *

For Dispensette® S Trace Analysis.

PTFE, coiled, length approx. 800 mm, with safety handle.

Pack of 1.

Nominal volume ml	Discharge tube Outer Ø mm	Inner Ø mm	Cat. No.
10	3	2	708132

* not suitable for HF



Discharge tubes

With and without recirculation valve. Nominal volume 10 ml.

Screw cap ETFE. Discharge tube marked with ,Pt-Ir' or ,Ta'.

Pack of 1.

Valve spring	Length mm	without recirculation valve Cat. No.	with recirculation valve Cat. No.
Platinum-iridium	105	708022	708122
Tantalum	105	708024	708124



Bottle stand

PP. Full plastic construction. Support rod 325 mm, base plate 220 x 160 mm, weight 1130 g.

Pack of	Cat. No.
1	704275



Dispensing cartridge with safety ring

Nominal volume 10 ml.

Calibrated, incl. quality certificate.

Pack of	Cat. No.
1	708035

USER
TIP

Cleaning of Dispensette® S Trace Analysis for trace analysis



Order of magnitude of ppb and ppt

The usual orders of magnitude magnitudes for concentrations in trace analysis are ppb and ppt. Magnitudes which we rarely encounter outside the laboratory. The following comparisons are intended to give a sense of these quantities. It is assumed that 1 m³ water is equal to 1,000 kg.

ppm = mg/kg: parts per million

1 part per 10⁶ parts; for ex.,
1 sugar cube (3 g) was dissolved
in 1 m³ water* = 3 ppm

ppb= µg/kg: parts per billion

1 part per 10⁹ parts; for ex.
1 sugar cube (3 g) was dissolved
in 1,000 m³ water* = 3 ppb

** (1,000 m³ correspond to a container of
10 m x 25 m x 4 m)

ppt = ng/kg: parts per trillion

1 part per 10¹² parts; for ex.,
1 sugar cube (3 g) was dissolved
in 1,000,000 m³ water* = 3 ppt

*(1,000,000 m³ correspond to a lake
about the size of 564 m in diameter and
4 m depth)

Traces of metal ions are omnipresent on surfaces. They can penetrate into the upper layers of the material when the workpieces are machined with steel tools, or they are deposited as (fine) dust on the surfaces. Before use in trace analysis, the Dispensette® S Trace Analysis must first be thoroughly cleaned. In doing so, use reagents having the purity level “per analysis” or better. A recirculation valve can help you reduce media losses. If the instrument is used with a recirculation valve, the cleaning must be done using both the dispensing and recirculating function.

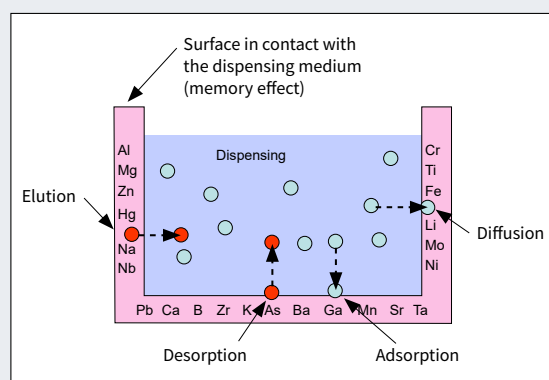


Figure:
Graphical representation of surface effects

Cleaning of Dispensette® S Trace Analysis

1.

Screw the device onto a bottle filled with acetone, deaerate and fill up to the maximum. Leave the piston at the upper stop and close the discharge tube with the screw cap. Dispense twice after approx. 24 hours reaction time, then the device must be completely drained and rinsed 5 times with pure water.

2.

Screw the device onto a bottle filled with approx. 37 % hydrochloric acid, deaerate and fill up to the maximum. Leave the piston at the upper stop and close the discharge tube with the screw cap.

3.

After approx. 24 hours reaction time, dispense twice and fill again to the maximum.

4.

Repeat step 3 two more times. After another 24 hours of reaction time, completely drain the device and rinse it 5 times with pure water p.a..

5.

Repeat steps 2 to 4 with a solution of approx. 65% nitric acid p.a..

6.

Screw the instrument onto a bottle filled with ultra high purity water for trace analysis, deaerate (3 strokes) and discard the content of the first two dispenses. The third dispensing is placed in a test tube for the determination of the blank values.

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