VITLAB®

Bürette / Buret

continuous

Gebrauchsanweisung
Operating Manual

Vor dem ersten Gebrauch das Gerät gründlich spülen oder die ersten Dosierungen verwerfen.

Before using the instrument for the first time, ensure it is rinsed carefully or discard the first few samples dispensed..

Contents

1. Safety Instructions

Please read the following carefully!

This Manual does not purport to address every safety issue which may arise during use. It is the responsibility of whoever uses this instrument to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1. Use the utmost caution when dispensing caustic, poisonous, radioactive or hazardous chemicals.
2. Observe general safety regulations e. g., wear protective clothing, goggles and gloves.
3. Observe the Operating Manual and information from reagent manufactures.
4. Never use the instrument in an atmosphere that might be explosive.
5. Use the instrument only for dispensing liquids, with strict regard to the defined Operating Exclusions and Limitations. If in doubt regarding the suitability of the instrument, for a particular application contact the manufacturer.
6. Before use, always verify that the instrument is in good working order, e. g., piston moves smoothly; filling and discharge tube are firmly seated and are properly attached, etc.
7. Never use force on the instrument. Use of force may result in danger to the user or other persons.
8. While dispensing, the discharge tube must always point away from the user or other persons. Avoid splashes. Only dispense into suitable vessel.
9. Never carry the mounted instrument by its upper casing.
10. Clean the instrument before disassembling.
11. Use only original manufacturer's accessories and spare parts. Do not carry out any technical alterations.
12. In case of difficulty (e. g., hand wheels difficult to move, leakage), immediately stop dispensing. Before further use, repair the instrument as described in this Manual. Contact the manufacturer if necessary.
13. The included 1.5 V micro-batteries are not rechargeable!

CE CE Marking

This sign certifies that the product meets the requirements of the EC directive and has been tested according to specified test methods.

2. Application and Operating Limitations

The instrument has a continuous, pulse-free dispensing technique and is designed for titrating liquids, observing the following physical limits:

- Working- and charging temperature: +15 °C to + 40 °C (for instrument and liquid)
- Storage temperature: -20 °C to + 50 °C
- Relative humidity: 0 % - 90 % non-condensing
- Sea-level, operation/ storage 2,000 m / 12,200 m
- Density up to 2.2 g/cm^3
- Vapor pressure up to 500 mbar

The dispensed volume of 0,01 mL to 999,9 ml appears on the display.

Warning!

To avoid splashing do not remove the discharge tube from its support!

3. Operating Limitations

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

When dispensing flammable media, make provisions to avoid static charging, e.g., do not dispense into plastic vessels; do not wipe instruments with a dry cloth.

Warning!

If there is a sign of a potential malfunction (e.g., piston difficult to move) never use force. Immediately stop dispensing and follow cleaning instructions (see chapter 8) or contact the manufacturer.

Note:

Compatibility of the instrument for this special application (e.g., trace material analysis) must be checked by the user or contact the manufacturer.

Warning!

Do not remove the discharge tube from its support! It must not be used as flexible discharge tube!

4. Operating Exclusions

When the instrument is correctly used, the dispensed liquid comes into contact with only the following materials:
Borosilicate glass 3.3, FEP, ETFE, PFA, PTFE and platinum-iridium.

Never use this instrument for:

- Liquids which attack FEP, ETFE, PFA and PTFE
- Solutions containing hydrofluoric acid
- Solutions which tend to crystallize, fuming acids and concentrated bases
- Suspensions containing solid particles
- Solutions which decompose and form solid particles (e. g., Biuret reagent)
- Substances which undergo catalytic transformation or react with platinum-iridium (e. g., H_2O_2)
- Carbon disulfide as this media inflames easily
- The instrument should not be used in an aggressive atmosphere (e.g., HCl fumes).
- The instrument must not be autoclaved!

5. Recommended Application Range for VITLAB® continuous

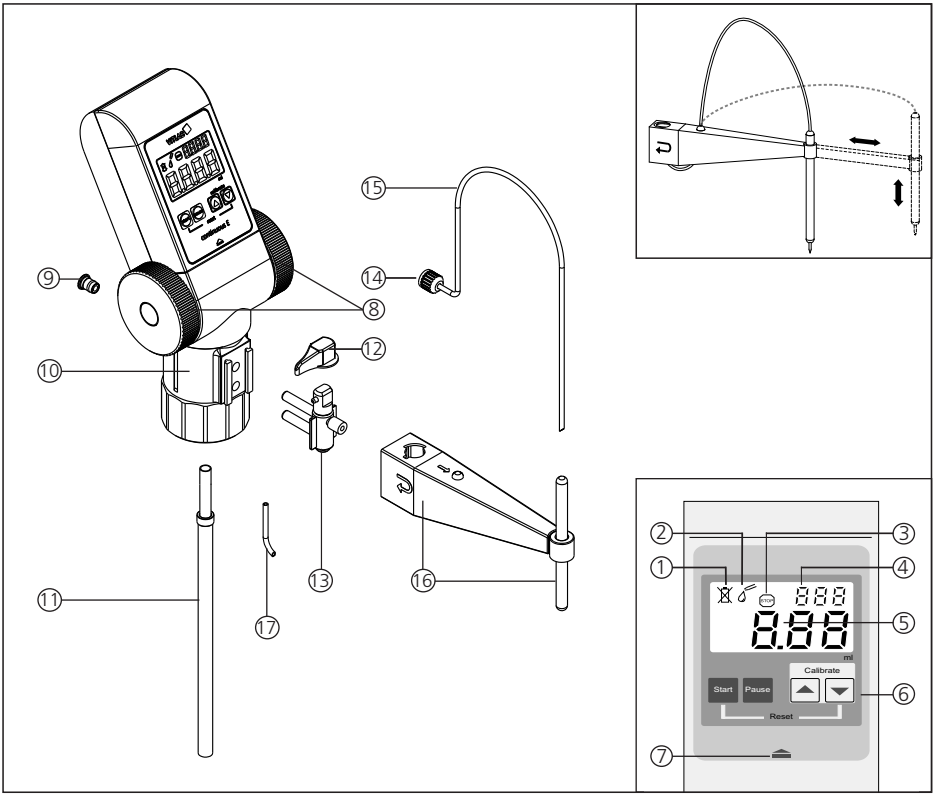
The bottletop-buret VITLAB® continuous E/RS can be used for the following titration media (max. conc. 1 mol/l).

Reagent
Acetic acid
Ammonium iron (II) sulfate solution
Ammonium thiocyanate solution
Barium chloride solution
Bromide bromate solution
Cerium (IV) sulfate solution
EDTA solution
Hydrochloric acid*
Iron (II) sulfate solution
Nitric acid*
Oxalic acid
Perchloric acid
Potassium bromate solution
Potassium bromate bromide solution
Potassium dichromate solution

Reagent
Potassium hydroxide solution*
Potassium iodate solution
Potassium permanganate solution
Potassium thiocyanate solution
Silver nitrate solution
Sodium arsenite solution
Sodium carbonate solution
Sodium chloride solution
Sodium hydroxide solution*
Sodium nitrite solution
Sodium thiosulfate solution
Sulfuric acid*
Tetra-n-butylammonium hydroxide solution
Zinc sulfate solution

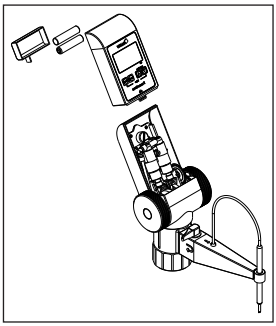
* To prevent humidity and carbon dioxide from entering the eluents, the use of an accordingly filled drying tube is recommended. Use a molecular sieve for acids to absorb humidity and soda lime as a weak CO_2 absorber for alkali eluents.

6. Components



1. Battery indicator
2. Titrating mode indicator
3. Pause indicator
4. Calibration mode indicator
5. Titrated volume display (0.00 to 999.9 ml)
6. Control keys
7. Lock
8. Hand wheels
9. Air vent opening cap (filter connection)
10. Valve head (GL 45)
11. Telescopic intake tube
12. Valve switch
13. Discharge/recirculation valve
14. Securing screw
15. Discharge tube
16. Discharge tube support, adjustable
17. Recirculation tube

7. Getting started



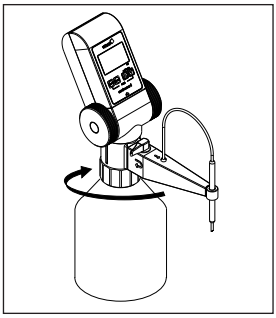
Before the first use please insert the provided batteries:

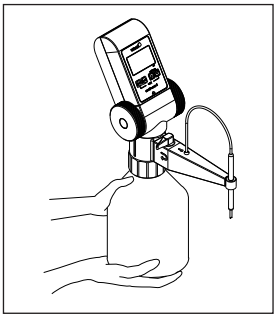
1. With your thumb, press on the latch located below the control keys. With your other hand, simultaneously push the front part of the outer casing toward the top.

> **Attention!**
> Never use force!

2. Insert two new micro batteries 1,5 V (LR03/AAA). Observe proper alignment of poles.
3. To reassemble the casing, position the bottom edge in place, then gently push downward until you can hear it locking.

8. Titration





8.1.Preparation for titration

1. Observe Operating Limitations and general safety regulations.
2. Adjust the length of the telescopic intake tube (according to the bottle to be used) and push the intake tube into the intake valve as far as it will go. Cut the lower end at an angle.
3. Screw the instrument (thread GL 45) onto the reagent bottle and align it with the bottle label. For bottles with different thread diameter select a suitable adapter!

> **Warning!**
> Avoid splashing of reagent! Always support both the instrument and the bottle. Carry the mounted instrument only as shown in figure.

> **Note:**
> If the bottle is shorter than the filling tube, separate the two sections and cut both filling tubes to the correct length.

8.2.Priming

> **Warning!**
> Ensure that the discharge tube is pointing away from the user and other persons at all times. Do not move the hand wheels until the instrument has been correctly mounted, and the valve switch (12) is in the "recirculate" position.

1. Set the valve switch (12) to "recirculation."
2. Turn the hand wheels forward 5 - 10 turns to remove air from the mechanism.
3. Set the valve switch (12) to the normal operating position, and hold a suitable vessel below the discharge tube outlet.
4. Turn the hand wheels forward until air bubbles have disappeared in the discharge tube.

8.3.Titration

1. To switch on the LCD, press the start key. The titration mode appears in the display.
2. Place a suitable collecting vessel below the discharge tube outlet.

> **Attention!**
> Wipe the remaining reagent drops from the discharge tube into the vessel.

3. Dispense reagent by turning the hand wheels forward until the desired value has been reached. If the hand wheels are rotated backward accidentally, they do not engage and the dispensing process is not affected.

> **Attention!**
> To avoid splashing of reagent, always turn the hand wheels using a slow and steady motion.

4. To start a new titration, press the "Start" key to reset the display to zero.
5. The display switches off automatically after approx. 5 minutes of idle time. However, the titrated value remains stored. It will reappear when the "Start" or "Pause" key are pressed, and the titration can be continued.
6. When the titrating action is finished, set the valve switch (12) back to "recirculation."

> **Note!**
> When the titrating is completed or interrupted, always set the valve switch (12) to "recirculation" to prevent the accidental release of liquid from the discharge tube.

8.4.Changing the reagent bottle

Changing the reagent bottle during a titration process:

1. Press the "Pause" key. The titrated value remains stored in the display.
2. Remove the instrument from the bottle as described in Chapter 9.1 ("Emptying").
3. Mount a new bottle and prime the instrument (Chapter 8.2).
4. Press the "Pause" key again. The "Titration" icon reappears in the display, and titration can be resumed, starting with the stored value.

9. Cleaning

Instrument will only function safely if cleaned regularly. Be sure to clean instrument:

1. Immediately, if the hand wheels move stiffly
2. Before changing reagents
3. Before longer breaks in use
4. Before any maintenance and repair work
5. Daily after use with solutions prone to crystallization and concentrated bases

> Warning:
> The intake mechanism, valves, and intake/discharge tubes are filled with reagent. Observe general safety regulations, e. g., wear protective clothing, goggles and gloves.

9.1.Emptying

1. Place instrument into a suitable basin.
2. Unscrew the instrument and lift it high enough so that the intake tube is no longer immersed in liquid.
3. Cautiously tap the intake tube against the inside of the bottle so that the reagent runs out.
4. Remove the instrument from the bottle and mount it on another empty bottle.
   Point the discharge tube into the opening of the used bottle, and empty the instrument by turning the hand wheels. Then set the valve switch to "recirculation" and turn the hand wheels again to empty the recirculation channel.

9.2.Standard cleaning

1. Mount the instrument on a bottle filled with a suitable cleaning solution.
2. Rinse the instrument thoroughly by turning the hand wheels.
3. Remove the instrument from the bottle and empty it completely by turning the hand wheels, as described above.
4. Mount the instrument on a bottle filled with distilled water. Rinse thoroughly, then empty, as described above.

9.3. Intensive Cleaning

Intensive cleaning must be preceded by the standard cleaning procedure (see chapter 9.2). This procedure must be followed if the hand wheels are hard to move, or if the instrument is heavily soiled. For this purpose, the instrument must be partially disassembled.

Warning!
Before disassemble, always perform the standard cleaning procedure. To prevent injuries from chemicals, always wear eye protection, protective clothing and protective gloves. Avoid splashing of reagent.

1. Pull off the telescopic intake tube and clean it with a soft bottle brush. Replace if necessary, especially if cracked or worn.
2. Clean discharge tube with a soft brush. Replace if necessary, especially if cracked or worn.
3. For instructions about cleaning the discharge/recirculation valves, see chap. 10.

Note:
The intake mechanism including the internal valves can only be serviced by trained and authorized service personnel. If continues to be soiled after repeated rinsing, please send the instrument to your authorized dealer for repair (see Chapter 16.1).

10. Cleaning or replacement of discharge / recirculation valve

Warning!
Never use force during disassembly and assembly. Verify that all components fit tightly and securely.

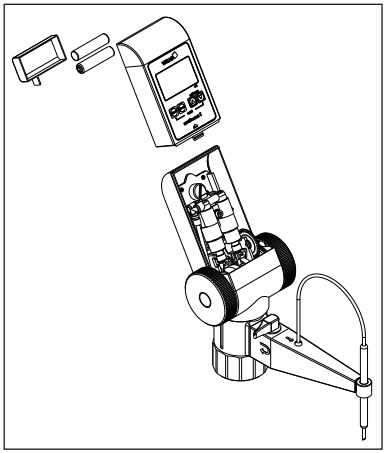
1. Set valve switch (12) to „recirculation".
2. Remove the valve switch (12), then lift the discharge tube support (16).
3. Unscrew the discharge tube securing nut (14) and pull out the discharge tube (15).
4. Pull out the discharge/recirculation valve (13).
5. Clean all parts. Replace if necessary.
6. To reassemble, push in the discharge/recirculation valve by hand.
7. Push in the discharge tube (15). Tighten the securing nut (14).
8. Mount the discharge tube support (16) and the valve switch (12).

Note:
Subsequent to reassembly gravimetrically check the volume (see chapter 12).

11. Battery replacement

When battery power runs low, a crossed-out battery symbol appears at the top left of the display. The batteries then need to be replaced.

1. With your thumb, press on the latch (7) located below the control keys. With your other hand, simultaneously push the front part of the outer casing toward the top.



Attention!
Never use force!

2. Remove the old batteries and dispose of properly.
3. Insert two new micro batteries 1,5 V (LR03/AAA). Observe proper alignment of poles.
4. To reassemble the casing, position the bottom edge in place, then gently push downward until you can hear it locking.

12. Checking the Volume

Depending on use, we recommend inspection of the instrument every 3 to 12 months. The cycle can, however, be adjusted to individual requirements. The complete testing procedure (SOP) can be downloaded at www.vitlab.com. In addition, a simple inspection can also be carried out over shorter time spans, for example by titration against a standard.

The gravimetric testing of the pipette volume is performed according to the following steps and is in accordance with DIN EN ISO 8655, Part 6.

1. Clean the burette (see 'Cleaning', chapter 9), fill it with distilled water and then prime it carefully.
2. To check the instrument, dispense distilled water into a weighing vessel.
3. Weigh the dispensed amount on an analytical balance. (Please follow the operating manual from the balance manufacturer.)
4. Convert the indicated weight into volume units, taking into account the temperature, density and atmospheric pressure. (The conversion factor Z is published in the standard.)
5. 10 dispensed amounts in 3 volume ranges (100%, 50%, 10%) are recommended.
6. From the 10 measured values, calculate the mean measured volume. Then calculate accuracy (%) and coefficient of variation (%).

Calculation for nominal volume V_0

x_i = Weighing results
n = Number of weighings
Z = Correction factor (e.g. 1,0029 µl/mg at 20 °C, 1013 hPa)

Mean value

$$\bar{x} = \frac{\Sigma\ x_i}{n}$$

Mean volume

$$\bar{V} = \bar{x} \cdot Z$$

Accuracy*

$$A\% = \frac{\bar{V} - V_0}{V_0} \cdot 100$$

Coefficient of Variation*

$$CV\% = \frac{100\ s}{\bar{V}}$$

Standard Deviation

$$s = Z \cdot \sqrt{\frac{\Sigma\ (x_i - \bar{x})^2}{n - 1}}$$

*) = Calculation of accuracy (A%) and variation coefficient (CV%): A% and CV% are calculated according to the formulas for statistical control.

Note:
Testing instructions (SOPs) are available for download at www.vitlab.com.

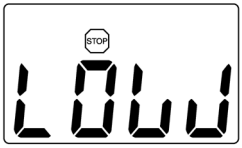
13. Recalibration

13.1 Recalibration

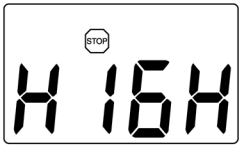
After prolonged use, or for specific applications instrument can be adjusted in order to compensate for differences in accuracy.

1. After the titration volume has been dispensed (e. g., 25 ml to 50 ml), press the Pause key. The last volume which has been titrated is then stored.

> Note:
> It is not possible to perform calibration with a value < 10 ml or > 90 ml, as the test volume is then too low or too high. At the attempt to enter the CAL mode with a volume < 10 ml or > 90 ml, the following displays will appear:



or



2. Hold down the ▲-key and the ▼-key simultaneously for 3 seconds until "CAL" starts flashing in the top right-hand corner of the display.
3. Using the ▲ or ▼ key, change the value shown in the display to the value of the mean measured volume (see chapter 11.1).
4. Press the "Start" key. The adjusted value is automatically accepted; the display is reset to zero, and the calibration procedure is completed. The symbol "C" appears in the display from now on, indicating that the factory calibration has been modified. (To revert to the factory calibration, see Chapter 13.3 "Reset function").

> Note:
> When in titrating mode and the "C" symbol is displayed, the current calibration value can be checked by pressing the ▲ or ▼ key. When the keys are released, the display automatically reverts back to the last value displayed.

13.2 Reset function

The reset function restores the factory calibration.

1. Press the "Start" key. The display is reset to zero, and the instrument changes into titrating mode.
2. Press the "Start" key and the ▼ key simultaneously for 3 seconds. The "C" symbol disappears from the display, and the original factory calibration is restored.

14. Troubleshooting

Error	Cause	Solution
Air is aspirated or air bubbles are present in the discharge tube.	– Instrument has not been primed correctly.	– Follow "Priming" procedure (Chapter 8.2).
	– Intake tube is not properly mounted or is damaged.	– Follow the cleaning procedure (Chapter 9). Push the intake tube into the intake valve as far as it will go. Shorten the intake tube, cut it off at an angle, or replace if needed.
	– End of intake tube is above the surface of the liquid.	– Extend the intake tube until it is immersed in the liquid.
No liquid is aspirated.	– Intake valve is sticking or clogged.	– Follow "Intensive Cleaning" procedure (Chapter 9). If this does not solve problem follow „Repair Service" (see chapter 16.1).
Dispensed volume is too low.	– Intake valve is soiled or damaged.	– Follow "Intensive Cleaning" procedure (Chapter 9.3). Remove the intake tube. If this does not solve problem follow „Repair Service" (see chapter 16.1).
	– Intake tube is not properly mounted or is damaged.	– Push the aspirating tube onto the filling valve as far as possible. Shorten the aspirating tube or replace if necessary.
	– Instrument is in "C" mode.	– Reset the instrument (Chapter 13.2) to restore factory calibration.

15. Safety symbols

Markings on the product	
	General warning sign
	Observe the operating manual
	Use eye protection
	Use hand protection
	Use protective clothing

16. Technical Data / Ordering Data

16.1 Items supplied

Digital Buret VITLAB continuous E / RS

with GL 45 connecting thread and threaded adapter made of PP in sizes GL 32, GL 38 and S 40 (buttres thread), telescoping filling tube (200 - 350 mm), telescoping discharge tube (140 - 220 mm), 2 Micro batteries 1,5 V (LR03, AAA), performance certificate and this operating manual.

	Volume per turn**	Systematic error*, A%	Random error*, CV%	Cat. No.
continuous E	2,5 ml	≤ ± 0,2	≤ 0,1	1620506
continuous RS	5,0 ml	≤ ± 0,2	≤ 0,1	1620507

* Values based on nominal volume
** Dispensing volume per rotation of the hand wheels

Calibration conditions	Distilled water, delivered at 20 ± 0.5 °C
Number of testing procedures	10 according to DIN EN ISO 8655/6

(Technical specifications subject to change.)

16.2 Power and current data

- Operating voltage 3 V (2 LR03/AAA,1.5 V batteries each)
- Power consumption less than10 mA
- Protection type: IP54

16.3 Accessories and Spare Parts

1. **Telescopic intake tube (11) (200 - 350 mm)** (FEP, ETFE, PTFE) Cat.No. 1671085
2. **Discharge/recirculation valve (13)** (PTFE, PFA) for continuous E and RS Cat.No. 1655085
3. **Discharge tube (14/15),** complete Cat.No. 1650135
4. **Discharge tube support (16),** adjustable Cat.No. 1650162
5. **Drying tube,** complete (without drying agent) Cat.No. 1671095
6. **Micro batteries 1,5 V (LR03/AAA),** 2 units Cat.No. 1670216
7. **Plastic stand, PP** Cat.No. 1671116

Threaded bottles, coated

Volume	Thread	Cat. No.
1000 ml	GL 45	1671500
2500 ml	GL 45	1671510

Threaded adapter

Thread	Cat. No.
GL 45 - GL 32	1670180
GL 45 - GL 38	1670110
GL 45 - S 40	1670120
GL 32 - NS 19/26	1670066
GL 32 - NS 24/29	1670067
GL 32 - NS 29/32	1670068

17. Repairs - Calibration Service

If a problem cannot be fixed by following the troubleshooting guide, or by replacing spare parts, then the instrument must be sent in for repair.

For safety reasons, instruments returned for checks and repairs must be clean and decontaminated!

17.1. Return for repair

a) Clean and decontaminate the instrument carefully.
b) Complete the „Declaration on Absence of Health Hazards" (ask your supplier or manufacturer for the form. The form can also be downloaded from www.vitlab.com).
c) Send the completed form along with the instrument to the manufacturer or to the dealer with an exact description of the type of malfunction and the media used.

The return transport of the instrument is at risk and cost of the sender.

17.2. Calibration Service

ISO 9001 and GLP-guidelines require regular examinations of your volumetric instruments. We recommend checking the volume every 3-12 months. The interval depends on the specific requirements on the instrument. For instruments frequently used or in use with aggressive media, the interval should be shorter.
The detailed testing instruction can be downloaded on www.vitlab.com.
VITLAB also offers you the possibility to have your instruments calibrated by the VITLAB Calibration Service.
Just send in the instruments to be calibrated, accompanied by an indication of which kind of calibration you wish. Your instruments will be returned within a few days together with a test report (VITLAB calibration service) or with a DAkkS Calibration Certificate. For further information, please contact your dealer or VITLAB.
Complete ordering information is available for download at www.vitlab.com (see Technical Documentation).

18. Warranty

We shall not be liable for the consequences of improper handling, use, servicing, operating or unauthorized repairs of the instrument or the consequences of normal wear and tear especially of wearing parts such as pistons, seals, valves and the breakage of glass as well as the failure to follow the instructions of the operating manual. We are not liable for damage resulting from any actions not described in the operating manual or if non-original spare parts or components have been used.

19. Battery Disposal

The adjoining symbol means that storage batteries and electronic devices must be disposed of separately from household trash (mixed municipal waste) at the end of their service life.
According to the Directive 2002/96/EC of the European Parliament and of the Council on Waste Electrical and Electronic Equipment (WEEE) of 27 January 2003, electronic equipment requires disposal according to the relevant national disposal regulations.
Batteries contain substances that can have harmful effects on the environment and human health. Therefore according to the Directive 2006/66/EC of the European Parliament and the Council on Waste Batteries of 6 September 2006 batteries require disposal according to the relevant national disposal regulations. Dispose of batteries only when completely discharged.

Warning!
Do not short-circuit the battery to discharge it!

Subject to technical modification without notice. Errors excepted.

DECLARATION OF CONFORMITY – China RoHS 2

VITLAB GMBH has made reasonable efforts to ensure that hazardous materials and substances may not be used in VITLAB products.
In order to determine the concentration of hazardous substances in all homogeneous materials of the subassemblies, a "Product Conformity Assessment" (PCA) procedure was performed. As defined in GB/T 26572 the "Maximum Concentration Value" limits (MCV) apply to these restricted substances:

- Lead (Pb): 0.1%
- Mercury (Hg): 0.1%
- Cadmium (Cd): 0.01%
- Hexavalent chromium (Cr(+VI)): 0.1%
- Polybrominated biphenlys (PBB): 0.1%
- Polybrominated diphenyl ether (PBDE): 0.1%

Environmental Friendly Use Period (EFUP)

EFUP defines the period in years during which the hazardous substances contained in electrical and electronic products will not leak or mutate under normal operating conditions. During normal use by the user such electrical and electronic products will not result in serious environmental pollution, cause serious bodily injury or damage to the user's assets.
The environmental Friendly Use Period for VITLAB instruments is 40 years.

此表格是按照SJ/T 11364-2014中规定所制定的。
This table is created according to SJ/T 11364-2014.

MATERIAL CONTENT DECLARATION FOR VITLAB PRODUCTS

部件名称 Part name	有毒有害物质或元素 Hazardous substances: 铅 Pb	汞 Hg	镉 Cd	六价铬 Cr(+VI)	多溴联苯 PBB	多溴二苯醚 PBDE	环保期限标识 EFUP
包装 / Packaging	O	O	O	O	O	O	
塑料外壳 / 组件 Plastic housing / parts	O	O	O	O	O	O	
电池 / Battery	O	O	O	O	O	O	
玻璃 / Glass	O	O	O	O	O	O	
电子电气组件 Electrical and electronic parts	X	X	X	O	O	O	
金属外壳 / 组件 Metal housing / parts	X	O	O	O	O	O	
电机 / Motor	X	O	O	O	O	O	
配件 / Accessories	X	O	O	O	O	O	10

注释：此表格适用于所有产品。以上列出的元件或组件不一定都属于所附产品的组成。
Note: Table applies to all products. Some of the components or parts listed above may not be part of the enclosed product.

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。
O: Indicates that the above mentioned hazardous substance contained in all homogeneous materials of the part is below the required limit as defined in GB/T 26572.

X: 表示该有毒有害物质至少在该部件某一均质材料中的含量超出GB/T 26572规定的限量要求。
X: Indicates that the above mentioned hazardous substance contained in at least one of the homogeneous materials of this part is above the required limit as defined in GB/T 26572.

除上表所示信息外，还需声明的是，这些部件并非是有意用铅 (Pb), 汞 (Hg), 铬 (Cd), 六价铬 (Cr(+-VI)), 多溴联苯 (PBB) 或多溴二苯醚 (PBDE) 来制造的。
Apart from the disclosures in the above table, the subassemblies are not intentionally manufactured or formulated with lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr+VI), polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE).

Products manufactured by VITLAB may enter into further devices or can be used together with other appliances. With these third party products and appliances in particular, please note the EFUP labeled on these products. VITLAB will not take responsibility for the EFUP of those products and appliances.

Place, date: Grossostheim, 05/07/2019

Wolfgang Nicolaus
(Managing Director)

Dennis Ewald
(Quality Managment)

VITLAB GmbH
Linus-Pauling-Str.1
63762 Grossostheim
Germany
Telefon: +49 6026 97799-0
Fax: +49 6026 97799-30
E-mail: info@vitlab.com
Internet: www.vitlab.com