

Quality you can trust!



# Volumetric Instruments

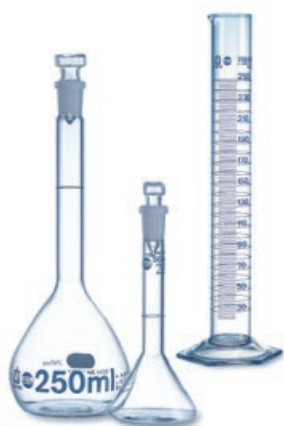
## BLAUBRAND®

F I R S T C L A S S · B R A N D

**Precision analysis requires measurement instruments with high precision.**

BLAUBRAND® volumetric instruments offer the best in technical perfection.

- Adjustments carried out using computer-controlled production facilities.
- Individually adjusted volumetric instruments, highest precision even for partial volumes.
- $AQL \leq 0.4$ , i.e. the error limits are met with a reliability of at least 99.6 %.
- Long service life through the use of high quality blanks and printing colors.
- No permanent volume changes after heating, up to 250 °C.
- Lot certificate supplied, and USP or DAKKS calibration certificate available upon request.



# BLAUBRAND® volumetric instruments

## Reliability for your analyses

### Blanks

Thermal stress in the glass blanks are eliminated prior to adjustment. This results in optimum mechanical stability, a requirement for keeping the volume constant despite any subsequent thermal load.

### Adjustment and marking

Every glass volumetric instrument is individually calibrated. For measuring instruments with scales, such as graduated pipettes, burettes and graduated cylinders, flexible screen stencils are used. These stencils can be stretched to match the calibration marks accurately, so that the measuring precision is maintained for all intermediate volumes.

### Thermal resistance

BLAUBRAND® volumetric instruments can be heated up to 250 °C in a drying cabinet or sterilizer without any permanent volume changes.

### Process control

These high-precision measuring instruments are manufactured in computer-controlled production facilities with statistical process control (SPC). Final inspection is conducted with random sample testing according to DIN ISO 3951.

### Quality management

The combination of process monitoring and random checks establishes an acceptable quality level (AQL) of at least 0.4. This means that the specified error limits are met with a statistical certainty of at least 99.6%.

### Reference temperature

The reference temperature 20°C applies to our volumetric instruments which are produced according to DIN EN ISO standards. In practical use, for example at 27 °C, the reference temperature is of minor importance, as the measuring deviation due to the volume expansion of the glass is generally smaller than the error limit of the volumetric instrument itself. However, if an adjustment or calibration is carried out at a different temperature, the measured values must be corrected accordingly (see DIN EN ISO 4787).

### Long service life

High-quality blanks combined with printing colors especially developed for this purpose are fired in at approx. 500 °C to ensure a long service life.



## Test equipment monitoring

Laboratories that operate under GLP guidelines, are accredited according to DIN EN ISO/IEC 17 025, or are certified by DIN EN ISO 9001, must conduct test equipment monitoring.

The testing of volumetric instruments is done gravimetrically according to DIN EN ISO 4787. So that calibration can be done rapidly and easily, while minimizing sources

of error, BRAND provides detailed testing instructions (SOP) for every type of volumetric instrument, free of charge.

To minimize glass erosion, we recommend cleaning at a temperature below 70 °C and the use of low-alkalinity cleaning agents for the shortest possible contact time. Further information, such as for monitoring of test equipment, can be found at: [www.brand.de](http://www.brand.de).



# Class A/AS volumetric instruments with certificate BLAUBRAND® and BLAUBRAND® ETERNA



Messpipette, Grad.Pipettes, Pipettes Graduees, Pipetas Graduadas BLAUBRAND, AS, 0.02ml		
Best.Nr./Cat. No./Ref. No./	27709	
Nominalvolumen/Nominal volume/ Volume nominal/Volumen nominal	2.0	ml
Fähigkeitsgrenze/Erreichte Linie/ Limite d'erreur/Limite de error	± 0.0100	ml
Chargen-/Batch No./ Numéro du lot/Numero del lote	15.01	
Mittelwert/Mean value/ Valeur moyenne/Valeur media	2.0011	ml
Standardabweichung/Standard deviation/ Ecart type/Desviación estándar	± 0.0020	ml
Prüfmittel - Testing devices Instruments de contrôle - Instrumentos de medición		
Waage/Balance/ Balança/Balanza	300400-25, 220g/5.00001	
Die Kalibrierung erfolgt nach 3 Monaten./The calibration is effected every 3 months. La calibrage se effectue tous les 3 mois./El calibrado se efectúa cada tres meses.		
Gewicht/Weggröße/ Poids/Pase	800033-1, F1 (2015, DKD11801, Nr. 02-349)	
Thermometer/Thermometer/ Termómetro/Termómetro	351000-3, 0-30°C/0.1°C (2024, EA-Wert, Nr. 3119)	
Zähler/ Prüfer/Operator Verifizierung/Comprobación	V. P. 15	
Ausstellungstermin/Date of issue/ Date de délivrance/Fecha de expedición	11-Mär-2015	

## DE-M

All BLAUBRAND® volumetric instruments kept and used for measurements in legally regulated applications are marked DE-M. The manufacturer BRAND uses this mark to certify the conformity of the instruments with the German Measurement and Calibration Regulation (replaces the previous Calibration Regulation)\*.

BRAND lists all the test equipment used in each lot and individual certificate.

\* as of January 1, 2015

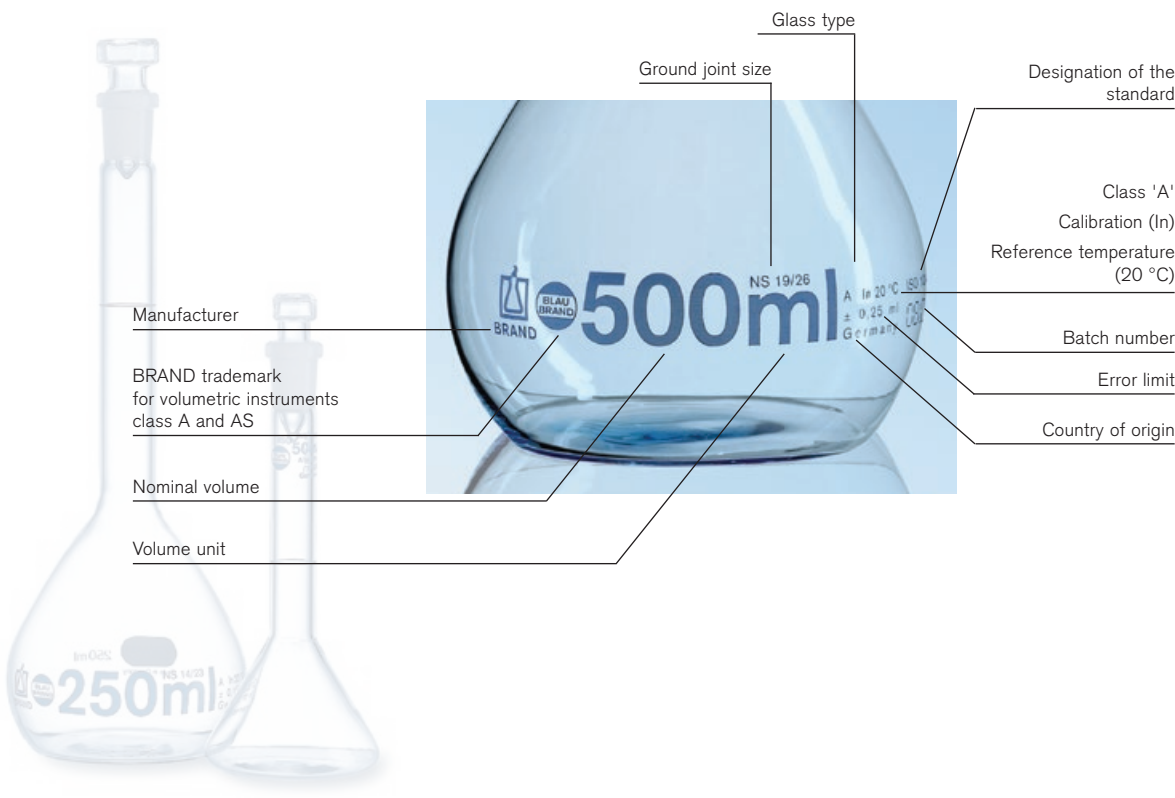
BRAND will change the mark on volumetric instruments to "DE-M" starting January 1, 2015.

## One batch certificate per packing unit!

All reusable BLAUBRAND® volumetric instruments are supplied with one batch certificate per packing unit of the manufacturer. On request, they are also available with an individual certificate, USP individual certificate or DAkkS calibration certificate. All individual and batch certificates are archived for at least 7 years, and are available for download at: [www.brand.de](http://www.brand.de).

## Identification of BLAUBRAND® volumetric instruments

Example: BLAUBRAND® volumetric flask, class A



# High quality printing colors

Class A/AS

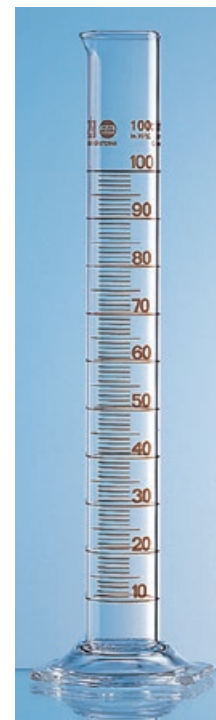
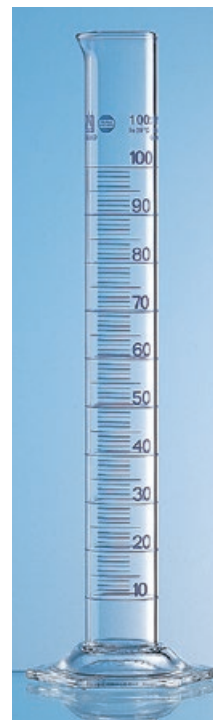


## Blue enamel

The blue enamel offers an excellent color contrast. It represents the optimum combination of resistance and readability. Blue enamel is used for BLAUBRAND® volumetric instruments.

## Amber diffusion stain

BLAUBRAND® ETERNA instruments are printed with an amber diffusion stain. It diffuses into the glass surface and can only be removed by abrasion. It is used for volumetric instruments which are subjected to particularly aggressive cleaning methods.



## Improve safety in the laboratory!

### BLAUBRAND® volumetric flasks with synthetic coating

The PUR coating envelops the volumetric flasks like a protection skin. In the event of breakage, the safety coating helps contain the glass fragments, and spillage of the medium can often be prevented. Compared to uncoated glass flasks the electrostatic charge is not increased. The light blue coating facilitates optical distinction. The maximum operating temperature at dry heat is 135 °C (expos. time < 30 min). Frequent autoclaving at 121 °C reduces splintering protection. Cleaning up to max. 95 °C.



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BRAND GMBH + CO KG · P.O. Box 11 55 · 97861 Wertheim · Germany  
Tel.: +49 9342 808-0 · Fax: +49 9342 808-98000 · E-Mail: [info@brand.de](mailto:info@brand.de) · Internet: [www.brand.de](http://www.brand.de)

