CALIBRATION CERTIFICATE

Nº 61 / LC10.038

Number **VG 220536**

Mettler-Toledo S.A.E.
Laboratorio de Calibración

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METTLER TOLEDO

ITEM	Piston operated burette
MANUFACTURER	Mettler Toledo
MODEL	DV 1020
NOMINAL VOLUME	20 ml
IDENTIFICATION	ID004028
APPLICANT	METTLER-TOLEDO PAC RIM AG-TAIWAN 2F., No 17, Lane 171, Sec. 2 , Jiuzong Rd 11494 Taipei City Taiwan
Calibration date	24 October 2022

Autorized Signatory

Firmado digitalmente por Jorge Bada
Fecha: 2022.10.26 16:47:11 +02'00'

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Instrument information

Burette	DV 1020
Serial number	ID004028
Nominal volume	20 ml

Calibration procedure

Procedure PEC/MTE/22 based to the ISO 8655 norm and with the METTLER TOLEDO manuals.
The measured volume corresponds with delivered volume (Ex) at the reference temperature of 20 ºC.

Calibration conditions

Ambient temperature	Min. 20,4 ºC	Max. 20,4 ºC
Relative humidity	64,5 % Hr	
Pressure	1014,1 mbar	

Maintenance: Before calibration seals (references 101003 and 25737) and piston have been replaced, and burette glass has been cleaned.

Traceability

Standard equipment used

Balance	BAL01	AT201 - 5 decimal places balance
Burette drive	MOT01	T50
Water temperature	TER128	0,1 ºC resolution
Ambient conditions	REG02	(air Temp, rH)
Class III water	2133409813	

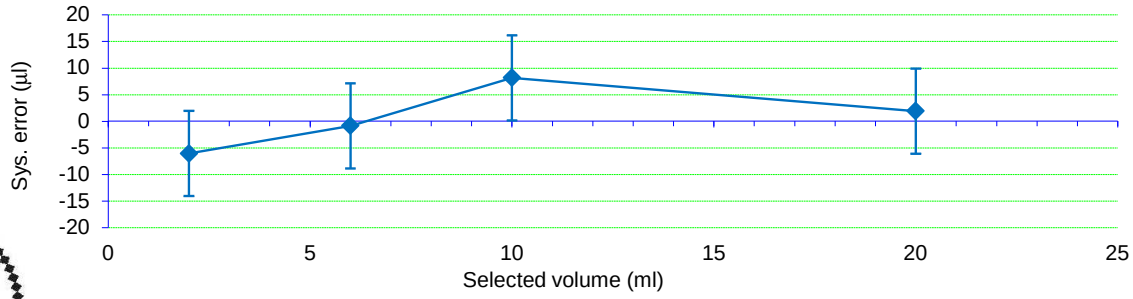
The reference water density is refered to the ISO/TR 20461 (2000) tables.
The traceability of measurements are refered to laboratories accredited by recognized ILAC organisms or national laboratories EUROMET participants.

Uncertainty

The reported expanded uncertainty of measurement is stated as the Standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with document EA-4/02 M: 2003.

Calibration results (after maintenance)

Burette stroke	10%	30%	50%	100%	
Selected volume	**2**	**6**	**10**	**20**	**ml**
Water temperature	20,5	20,5	20,5	20,5	ºC
Measured volume	1993,9	5999,1	10008,2	20001,9	µl
Systematic error	**-6,1**	**-0,9**	**8,2**	**1,9**	**µl**
Measurement uncertainty	**8,0**	**8,0**	**8,0**	**8,0**	**µl**
Random error	**0,54**	**0,31**	**0,24**	**0,41**	**µl**
Max. Permissible Sys. Error	40	40	40	40	µl
Max. Permissible Random Error	14	14	14	14	µl
Evaluation*	**Pass**	**Pass**	**Pass**	**Pass**	



* Evaluation and permissible errors from ISO 8655-3:2002. According with this norm, uncertainty is not taken into account.

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Technician: D. Gallardo
Remarks: ---