



Socorex Service Center



Calibration Laboratory accredited by the Swiss Accreditation Service
 Von der Schweizerischen Akkreditierungsstelle akkreditierte Kalibrierstelle
 Laboratoire d'étalonnage accrédité par le Service d'Accréditation Suisse

SCS 0112

The Swiss Accreditation Service (SAS) is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

CERTIFICATE OF CALIBRATION KALIBRIER - ZERTIFIKAT CERTIFICAT D'ETALONNAGE

Customer Kunde Client	SOCIETE DES PRODUITS NESTLE S.A	Order No. / Date Auftrags-Nr. / Datum No. de commande / Date	3201442566/08.05.23
Object Gegenstand Objet	Piston-operated volumetric apparatus - Single-channel air displacement pipette of type A		
Manufacturer Hersteller Fabricant	SOCOREX ISBA S.A., 1024 Ecublens, Switzerland		
Model / Ref. Modell / Ref. Modèle / Réf.	ACURA 825.1000	Serial No. Seriennummer No. de série	18113583
Remarks Bemerkungen Remarques			
Date of calibration Datum der Kalibrierung Date de l'étalonnage	11-May-2023		

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 Dieses Kalibrierzertifikat dokumentiert die Rückverfolgbarkeit auf nat. Normale zur Darstellung der physikalischen Einheiten (SI).
 Ce certificat d'étalonnage confirme le raccordement aux étalons nationaux qui matérialisent les grandeurs physiques (SI).

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages and are part of the certificate.
 Messresultate, Messunsicherheiten mit Vertrauensbereich und Messverfahren sind auf den folgenden Seiten aufgeführt und sind Teil des Zertifikats.
 Les résultats, les incertitudes avec le niveau de confiance et les méthodes de mesure sont donnés aux pages suivantes et font partie du certificat.

Certificate No.
Zertifikat-Nr.
No. de certificat

B-09184613

Head of the Calibration Laboratory
Leiter der Kalibrierstelle
Responsable du Laboratoire d'Etalonnage

DocuSigned by:

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Approved by
Genehmigt durch
Approuvé par

15-May-2023 | 17:43 CEST

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Socorex Service Center

Accreditation No. SCS 0112 in accordance with ISO/IEC 17025



CERTIFICATE OF CALIBRATION KALIBRIER - ZERTIFIKAT CERTIFICAT D'ETALONNAGE

CUSTOMER SOCIETE DES PRODUITS NESTLE S.A

CERTIFICATE NO.

B-09184613

INSTRUMENT

MODEL/CAT. NO.

ACURA 825.1000

VOLUME RANGE

100-1000 µl

SERIAL NO.

18113583

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%.

CALIBRATION, CONDITIONS AND EQUIPMENT

- Gravimetric method based on ISO 8655
- Test room humidity: 60% ±10% / Humidity trap
- Forward mode

BALANCE ID XP 205/1123472820

AIR TEMP. between 20-25°C (+/- 0.5 °C)

AIR PRESSURE 967 hPa (+/- 5 hPa)

WATER TEMP. 22.0°C (+/- 0.2°C)

LIQUID DENSITY (calculated) 0.997768 g/cm³

CONVERSION FACT. Z (calc.) 1.003242

CERTIFIED TIPS Qualitip® 3190.1000R

TEST RESULTS (After Calibration)

VOLUME 1	VAL. / MEAN	VOLUME 2	VAL. / MEAN	VOLUME 3	VAL. / MEAN
100 µl	99.32 µl	500 µl	497.21 µl	1000 µl	997.92 µl
	98.92 µl		499.11 µl		997.32 µl
	99.72 µl		498.21 µl		997.72 µl
	99.72 µl		498.91 µl		996.62 µl
	99.62 µl		499.21 µl		997.22 µl
	98.82 µl		499.61 µl		997.82 µl
	99.22 µl		499.01 µl		998.63 µl
	99.82 µl		499.01 µl		997.42 µl
	100.12 µl		499.71 µl		997.72 µl
	99.82 µl		499.71 µl		997.92 µl
Mean >	99.51 µl	Mean >	498.97 µl	Mean >	997.63 µl

INACCURACY

	ACTUAL	SPECIFICATIONS	ACTUAL	SPECIFICATIONS	ACTUAL	SPECIFICATIONS		
E	-0.49 µl	1.50 µl	E	-1.03 µl	5.00 µl	E	-2.37 µl	5.00 µl
E	-0.49%		E	-0.21%		E	-0.24%	

UNCERTAINTY (K=2)

U +/-	0.27 µl		U +/-	0.48 µl		U +/-	0.87 µl	
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Accuracy error (E) of piston-operated volumetric device complies with maximum permissible error

(MPE - specifications based on manufacturer data's) without taking uncertainty (U) into consideration.

$|E| \leq \text{MPE}$

STATUS

Passed	Passed	Passed
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IMPRECISION

SD	0.42 µl	0.50 µl	SD	0.77 µl	2.00 µl	SD	0.53 µl	2.00 µl
CV	0.43%		CV	0.15%		CV	0.05%	

Experimental standard deviation \leq max. permissible error specified by ISO 8655 or better

STATUS

Passed	Passed	Passed
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E = Mean error SD = Standard deviation CV = Coefficient of variation

OPERATOR NAME

S. Camiolo

CONTROL DATE

11-May-2023

This certificate is stored for 5 years.

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