Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-K-15043-01-00 according to ISO/IEC 17025:2017

Period of validity: 29.06.2020 to 28.06.2025 Date of issue: 29.06.2020

Holder of certificate:

Calibraciones Industriales S. A.
Barros Arana Nr. 73, 110-0133 Iquique, Chile

Calibration in the fields:

Mechanical quantities

Fluid quantities

- **Liquid flow rate**
- **Volume of flowing liquids**
- **Mass of flowing liquids**

Abbreviations used: see last page

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement [1)]	Remarks
Liquid volume flowrate measurement	0,1 L/h to 2 L/h 0,6 L/h to 17 m³/h 8 m³/h to 300 m³/h	Gravimetric calibration	0,15 %	Water temperature 17 °C to 28 °C; Diverter-operated flying start and finish
Total volume flow (volume flow totalizers)	0,1 L to 2 L 5 L to 250 L 500 L to 3000 L	Gravimetric calibration	0,15 %	
Liquid mass flowrate measurement	0,1 kg/h to 2 kg/h 0,6 kg/h to 17 t/h 8 t/h to 300 t/h	Gravimetric calibration	0,15 %	
Total mass flow (mass flow totalizers)	0,1 kg to 2 kg 5 kg to 250 kg 500 kg to 3000 kg	Gravimetric calibration	0,15 %	
Liquid mass flowrate measurement (mass-flow totalizing meters)	10 kg/h to 250 kg/h	Gravimetric calibration	0,15 %	
Liquid mass flowrate measurement (mass-flow meters)	0,6 kg/h to 17 t/h	Gravimetric calibration	0,15 %	
Liquid mass flowrate measurement	0,6 L/h to 300 m³/h	Master-meter-based calibration	0,25 %	Water temperature 17 °C to 28 °C; Flying start and finish
Total volume flow measurement	0,6 L/h to 300 m³/h	Master-meter-based calibration	0,25 %	

Abbreviations used:

CMC Calibration and measurement capabilities

[1)] The expanded uncertainties according to EA-4/02 M:2013 are part of CMC and are the best measurement uncertainties within accreditation. They have a coverage probability of approximately 95 % and have a coverage factor of k = 2 unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.