SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

CHEMTRACE – NORTHWEST
ANALYTICAL TESTING AND SOLUTIONS
Quantum Global Technologies, LLC
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Portland, OR 97220
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CHEMICAL

Valid To: February 28, 2019 Certificate Number: 2252.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above as well as the one satellite laboratory location listed below to perform the following specialized analytical test services for chemicals, aqueous solutions, ultrapure water, components, chamber parts and wafers including[1]:

Test	Test Method(s)
Analysis of Trace Metals by ICP-MS • In Acid and Base Solutions • In Silicon Samples • In Organic Solvents • In Ultrapure Water	SOP CAT-C039 SOP CAT-C003 SOP CAT-C052 SOP CAT-C007 SOP CAT-W002
Analysis of Surface Trace Metals by ICP-MS • On Silicon Wafers by VPD • On Tool Components by Acid Extraction	SOP CAT-S007 SOP CAT-S001 SOP CAT-S005
Preparation and Analysis of Ultrapure Water Samples for Total Silica by GFAAS	SOP CAT-W011 SOP CAT-C004
Analysis of Anions and Cations by Ion Chromatography • In Ultrapure Water • In Water Leachable Anions and Cations on Silicon Wafer Surface	W003A SOP CAT-S002
Analysis of Dissolved Silica in Ultrapure Water by Spectrophotometer	SOP CAT-W017
Assay by Auto Titration • Acids • Bases	SOP CAT-C023 SOP CAT-C024
Analysis of pH in Aqueous Solutions	SOP CAT-C045 (ASTM E70)
Analysis of Total Organic Carbon (TOC) in UPW or Acid and Base Solutions	SOP CAT-C016 SOP CAT-W016

5202 Presidents Court, Suite 220 | Frederick, MD 21703-8398 | Phone: 301 644 3248 | Fax: 240 454 9449 | www.A2LA.org

Test	Test Method(s)
Quantitation of Viable Bacteria in Ultrapure Water	SOP CAT-W005
Measurement of Conductivity Using the YSI 3200 Conductivity Meter	SOP CAT-W028

[1]This accreditation covers testing performed at the main laboratory listed above, and the following satellite laboratories listed below:

CHEMTRACE – KOREA
517-19 Samcheonbyeongma-ro
Paltan myeon, Hwaseong-si,
Gyeonggi-do, 445-911
South Korea

Test	Test Method
Preparation of Acid and Base Solutions for Trace Metal Analysis Using ICP-MS	CAT-C003
Preparation of Solvents for Trace Metal Analysis Using ICP-MS	CAT-C007
Operation and Set-Up of the Perkin Elmer ELAN 6000/NexION ICP-MS for the Analysis of Trace Metals in Process Chemicals	CAT-C039
Assay of Chemical Solutions by Auto Titration Method	CAT-C023
Assay of Bases by Auto Titration Method	CAT-C024
Determination of Acid Extractable Surface Metal Contaminants on Tool Components by ICP-MS	CAT-S005
Operation and Set-Up of the Perkin Elmer ELAN 6100 DRC II/NexION 350S ICP-MS for the Analysis of Trace Metals on Wafers and Tool Components	CAT-S007
Operation and Set-Up of the Perkin Elmer ELAN DRC II ICP-MS for the Analysis of Trace Metals in Ultrapure Water	CAT-W002
Analysis of Anions and Cations in Ultrapure Water (UPW) Using the Dionex ICS 3000/5000 Ion Chromatograph (IC)	CAT-W003A
Analysis of Dissolved Silica in Ultrapure Water Using Spectrophotometer Methods	CAT-W017

Accredited Laboratory

A2LA has accredited

CHEMTRACE

Portland, OR
with satellite location in Hwaseong, *South Korea*

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 2nd day of February 2017.

President and CEO
For the Accreditation Council
Certificate Number 2252.02
Valid to February 28, 2019
Revised February 28, 2017

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.