



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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, 2021

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 two satellite laboratory locations listed below to perform the following specialized analytical test services for chemicals, aqueous solutions, ultrapure water, components, chamber parts and wafers including¹:

<u>Test</u>	<u>Test Method(s)</u>
Analysis of Trace Metals by ICP-MS <ul style="list-style-type: none">• In Acid and Base Solutions• In Organic Solvents• In Organics by Microwave Digestion• In Silicon Samples• In Hexachlorodisilane• In Ultrapure Water	SOP CAT-C039 SOP CAT-C003 SOP CAT-C007 SOP CAT-C015 SOP CAT-C052 SOP CAT-C055 SOP CAT-W002
Analysis of Surface Trace Metals by ICP-MS <ul style="list-style-type: none">• On Silicon Wafers by VPD• On Tool Components by Acid Extraction	SOP CAT-S007 SOP CAT-S001 SOP CAT-S005
Analysis of Total Silica in Ultrapure Water by GFAAS	SOP CAT-W011 SOP CAT-C004
Analysis of Dissolved Silica in Ultrapure Water by Spectrophotometer	SOP CAT-W017
Analysis of Anions and Cations by Ion Chromatography <ul style="list-style-type: none">• In Ultrapure Water• For Raw Water and UPW Extract Water Only• In Water Leachable Anions and Cations on Silicon Wafer Surface	SOP CAT-W003A SOP CAT-W010 SOP CAT-S002
Assay by Auto Titration <ul style="list-style-type: none">• Acids• Bases	SOP CAT-C023 SOP CAT-C024
Analysis of pH in Aqueous Solutions	SOP CAT-C045

<u>Test</u>	<u>Test Method(s)</u>
Quantitation of Viable Bacteria in Ultrapure Water	SOP CAT-W005
Analysis of Total Organic Carbon (TOC) in UPW, Acid, Hydrogen Peroxide, or Base Solutions	SOP CAT-C016 SOP CAT-W016
Analysis of Conductivity in Aqueous Solutions	SOP CAT-W028
Analysis of Liquid Samples by Particle Measuring Systems	SOP CAT-C029

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

CHEMTRACE – TAIWAN
No. 7 Gongye 3rd Road, Annan Dist.
Tainan City 709
Taiwan R.O.C.

<u>Test</u>	<u>Test Method(s)</u>
Analysis of Trace Metals by ICP-MS <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • On Silicon Wafers by VPD • On Tool Components by Acid Extraction 	SOP CAT-S007 SOP CAT-S001 SOP CAT-S005
Analysis of Anions and Cations by Ion Chromatography <ul style="list-style-type: none"> • Ultrapure Water 	SOP CAT-W003A
Analysis of Total Silica in Ultrapure Water by ICP-OES	SOP CAT-W011
Analysis of Dissolved Silica in Ultrapure Water by Spectrophotometer	SOP CAT-W017
Assay by Auto Titration <ul style="list-style-type: none"> • Acids • Bases 	SOP CAT-C023 SOP CAT-C024
Analysis of pH in Aqueous Solutions	SOP CAT-C045
Quantification of Viable Bacteria in Ultrapure Water	SOP CAT-W005
Analysis of Total Organic Carbon (TOC) in UPW, Acid, Hydrogen Peroxide, or Base Solutions	SOP CAT-W016

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

<u>Test</u>	<u>Test Method(s)</u>
Analysis of Trace Metals by ICP-MS <ul style="list-style-type: none"> • In Acid and Base Solutions • In Organic Solvents • In Ultrapure Water 	SOP CAT-C039 SOP CAT-C003 SOP CAT-C007 SOP CAT-W002
Analysis of Surface Trace Metals by ICP-MS <ul style="list-style-type: none"> • On Silicon Wafers by VPD • On Tool Components by Acid Extraction 	SOP CAT-S007 SOP CAT-S001 SOP CAT-S005
Analysis of Anions and Cations by Ion Chromatography <ul style="list-style-type: none"> • Ultrapure Water 	SOP CAT-W003A
Analysis of Dissolved Silica in Ultrapure Water by Spectrophotometer	SOP CAT-W017
Assay by Auto Titration <ul style="list-style-type: none"> • Acids • Bases 	SOP CAT-C023 SOP CAT-C024
Analysis of pH in Aqueous Solutions	SOP CAT-C045
Quantitation of Viable Bacteria in Ultrapure Water	SOP CAT-W005



Accredited Laboratory

A2LA has accredited

CHEMTRACE

Portland, OR

with satellite locations in Hwaseong, SOUTH KOREA and Tainan City, TAIWAN R.O.C.

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *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 April 2017).



Presented this 27th day of March 2019.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2252.02
Valid to February 28, 2021

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