

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CHEMICAL

Valid To: October 31, 2024

Certificate Number: 2234.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on <u>ultra-pure water and chemicals used in the semiconductor industry</u>:

Test	Test Method(s)	
Anions and Cations by Ion Chromatography		
Anions (ppt) in Ultra-Pure Water by Ion Chromatography Acetate, Br, Cl, F, Formate, NO ₂ , NO ₃ , Oxalate, PO ₄ , SO ₄	PR-IN11	
Anions in H ₂ O ₂ by Ion Chromatography Br, Cl, F, NO ₂ , NO ₃ , PO ₄ , SO ₄	PR-IN16	
Anions in HF by Ion Chromatography Cl, NO ₃ , PO ₄ , SO ₄	PR-IN09 PR-IN56	
Cations (ppt) in Ultra-Pure Water by Ion Chromatography Ca, K, Li, Mg, Na, NH ₄ ⁺	PR-IN12	
Cations in DI Water and Solvents by Ion Chromatography Ca, K, Li, Mg, Na, NH4 ⁺ , Monomethylamine, Dimethylamine, Trimethylamine	PR-IN21	
Caustic Anion Analysis Procedure by Ion Chromatography Br, Cl, F, NO ₂ , NO ₃ , PO ₄ , SO ₄	PR-IN15	
Anions in DI Water and Solvents by Ion Chromatography Acetate, Br Cl, F, Formate, NO ₂ , NO ₃ , Oxalate, PO ₄ , SO ₄	PR-IN06	
Preparation of Samples for Ion Chromatography Analysis	PR-IN46	
Chemical and Solvent Titrations		
Acid, Base, and H ₂ O ₂ Titrations by Auto-Titrator	PR-IN04	
Moisture Analysis of Solvents by Karl Fischer	PR-IN18	

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Test	Test Method(s)	
Miscellaneous Analysis		
Dissolved Silica in Water by UV-Vis	PR-IN33	
UV-Vis Spectrometer Analysis	PR-IN24	
Total Organic Carbon in Water	PR-IN38	
Trace Element Analysis of Chemicals, Wafers, and Ultra-Pure Water		
Analysis of Silicon Wafers by LP-ICPMS Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, Pb, Pd, Pr, Pt, Rb, Re, Rh, Ru, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr	PR-IN27	
Preparation of Samples for Trace by ICP-MS Element Analysis Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Rb, Re, Rh, Ru, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr	PR-IN14 PR-IN47	
Trace Element Analysis by ICP-OES Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Rb, Re, Rh, Ru, S, Sb, Sc, Se, Si, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr	PR-IN02	
Trace Elements in Chemicals, Solvents, and Ultra-Pure Water by ICP-MS Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Pt, Rb, Re, Rh, Ru, S, Sb, Sc, Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr	PR-IN45 PR-IN48 PR-IN52	
Trace Elements Analysis by Direct Injection of Solvents and Organic Materials Ag, Al, As, Au, B, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy,Er, Eu, Fe, Ga, Gd, Ge, Hf, Hg, Ho, In, Ir, K, La, Li, Lu, Mg, Mn,Mo, Na, Nb, Nd, Ni, Os, P, Pb, Pd, Pr, Rb, Re, Rh, Ru, S, Sb, Sc,Se, Sm, Sn, Sr, Ta, Tb, Te, Th, Ti, Tl, Tm, U, V, W, Y, Yb, Zn, Zr	PR-IN58	
Assay of Solvents and Analysis of Organic Impurities in		
Solvents	DD INISS	
Analysis of Organic Impurity in Solvents using GC-MS	PR-IN57	
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Accredited Laboratory

A2LA has accredited

PRECILAB Carrollton, TX

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 26th day of July 2022.

Vice President, Accreditation Services For the Accreditation Council Certificate Number 2234.01 Valid to October 31, 2024