



IECQ QUALITY ASSESSMENT SYSTEM (IECQ)

For rules and details of the IECQ visit www.iecq.org

IECQ Certificate of Approval Independent Testing Laboratory

IECQ Certificate No.:	IECQ-L ULTW 16.0003	Issue No.:	7	Status:	Current
Supersedes:	IECQ-L ULTW 16.0003 Issue 6	Issue Date:	2024/08/29	Org Issue:	2016/07/28
CB Reference No.:	20001845 ITL	Expiration:	2025/07/27		

Materials Analysis Technology Inc.

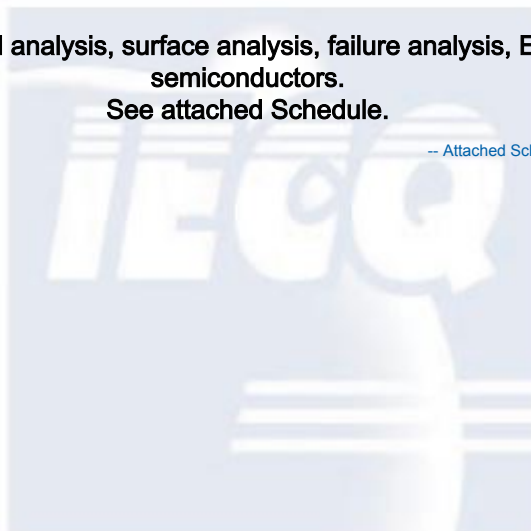
1F No.1 Li Hsin Rd., I,
Science Based Industrial Park
Hsinchu City, 300
Taiwan

The organization, facilities and procedures have been assessed by the IECQ Certification Body in accordance with IECQ 03-1 and IECQ 03-6 for issuance of this certificate and found to be in conformity with the applicable requirements of the IECQ Independent Testing Laboratory Assessment Program Requirements Scheme and in respect of ISO/IEC 17025:2017 for the testing of component product under the IECQ.

Scope:

The materials analysis, chemical analysis, surface analysis, failure analysis, ESD tests and wire bonding of semiconductors.
See attached Schedule.

-- Attached Schedule: IECQ-L_ULTW_20001845 ITL_08-29-24.pdf --



Approved by Certification Body (CB): DQS Group - DQS Taiwan Inc.

8F, 23, Yuan Huan West Road,
Feng Yuan Dist., Taichung City
Taiwan

Authorized person:
Bob CHEN



The validity of this certificate is maintained through on-going surveillance audits by the IECQ CB issuing this certificate.

This Certificate of Conformity may be suspended or withdrawn in accordance with the Rules of Procedure of the IECQ System and its Schemes.

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Schedule of Scope to Certificate of Approval

Independent Testing Laboratory

IECQ Certificate No.: IECQ-L ULTW 16.0003

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Schedule Number: IECQ-L ULTW 16.0003-S

Rev No.: 7

Revision Date: 2024/08/29

Page 1 of 3

Appendix-1 (20001845 ITL)

Schedule of Scope to Certificate of Approval

Description test	Standard
Scanning Electron Microscope (SEM)	T-SEM-3
Transmission Electron Microscope - Electron Energy Loss Spectroscopy (TEM-EELS)	T-TEM-3
Energy Dispersive Spectrometry of X-ray (EDS)	T-SEM-3, T-TEM-3
Electron Back Scatter Diffraction (EBSD)	T-TEM-3
Focused Ion Beam microscope (FIB)	T-FIB-3
Liquid Cell Electron Microscopy	T-TEM-3
Secondary Ion Mass Spectrometry (SIMS)	T-SIM-3
Atomic Force Microscope (AFM)	T-SIM-3
Spreading Resistance Probe (SRP)	T-SIM-3
Alpha-step stylus profiler	T-SIM-3
X-Ray Diffraction (XRD)	T-SIM-3
X-Ray Photoelectron Spectroscopy (XPS)	T-SIM-3
X-Ray Fluorescence Spectrometer (XRF)	T-SIM-3

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DQS-Group - DQS Taiwan Inc., Feng Yuan Dist., Taichung City, Taiwan





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Page 2 of 3

X-Ray imaging	T-EFA-3
Emission Microscopy (EMMI)	T-EFA-3
Emission Microscopy (EMMI)-InGaAs	T-EFA-3
Optical Beam Induced Resistance Change (OBIRCH)	T-EFA-3
Conductive atomic force microscopy (C-AFM)	T-EFA-3
Scanning Capacitance Microscopy (SCM)	T-SIM-3
Fourier-Transform Infrared Spectroscopy (FTIR)	T-SIM-3
Nano Probe	T-EFA-3
Scanning Acoustic Tomography (SAT)	T-EFA-3
Optical Microscope (OM)	T-OMI-3
3D Optical Microscope (3D OM)	T-LAB-3
Optical Profiler (OP)	T-SIM-3
IC Layout Imaging	T-OMI-3
Circuitry analysis	T-OMI-3
Auger Electron Spectroscopy (AES)	T-SIM-3
Thermal Emission Microscope (THEMOS)	T-EFA-3
Time Domain Reflectometry (TDR)	T-LAB-3
3D X-Ray microscopy	T-EFA-3

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Page 3 of 3

Latch-up test	JESD78
Human Body Mode (HBM)	ANSI/ESDA/JEDEC JS-001, ANSI/ESD STM 5.1, JESD22-A114, MIL-STD-883, AEC-Q100-002
Machine Mode (MM)	ANSI/ESD S5.2, JESD22-A115, AEC-Q100-003
Charge Device Mode (CDM)	ANSI/ESD SP5.3.2, ANSI/ESD S5.3.1, JESD22-C101, ANSI/ESDA/JEDEC JS-002, AEC-Q100-011,
Electrostatic discharge immunity test	IEC 61000-4-2
Transmission Line Pulse (TLP)	ANSI/ESD STM5.5.1, ANSI/ESD SP5.5.2
Electrical Overstress (EOS)	IEC 61000-4-5
Wire Bonding	T-EFA-3
IC Package	T-EFA-3
Pull and shear test	MIL-STD-883 method 2011.9 MIL-STD-883 method 2023.7 AEC-Q100-001, EIA/JESD22-B116, JESD22-B117
Dynamic Light Scattering (DLS)	B-LAB-3
Thermogravimetric Analyzer (TGA)	B-LAB-3
Differential Scanning Calorimeter (DSC)	B-LAB-3
Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	B-LAB-3
Thin Film Analyzer	T-SIM-3

Technical Reviewer of DQS:

Paul Yang

Date: 8/29/2024

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