

# Analytical Services Nikon® Equipment and Environmental Testing

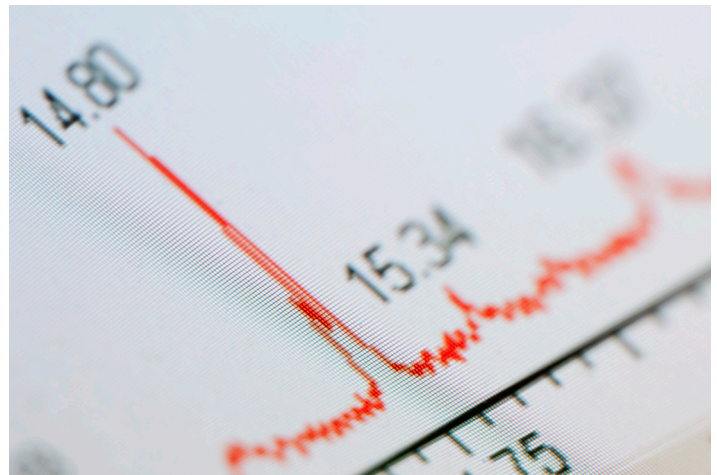
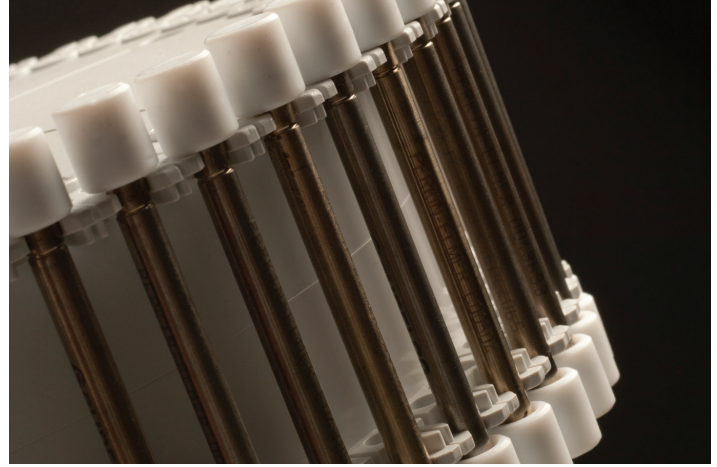
*Validate Nikon stepper/scanner  
environments with confidence*

Entegris Analytical Services is the leader in the measurement of airborne molecular contamination (AMC) for semiconductor cleanrooms, photolithography applications, and OEM compliance.


Based on more than 30 years of service and chemical filter development, Analytical Services is one of more than 30 global Entegris laboratories and provides state-of-the-art AMC analysis for Nikon® exposure tool environment compliance to ensure confident operation of DUV scanners and their chemical filter and purifier systems.

## APPLICATIONS

Following the “See It. Control It.” paradigm, Entegris Analytical Services naturally complements our market-leading OEM chemical filtration and purification systems and a broad suite of products for comprehensive contamination control solutions. The service provides measurements for Nikon’s NSR environmental and installation specifications.



## FEATURES & BENEFITS

<b>OEM approved service</b>	Nikon approved laboratory service  Data support discussions with Nikon on ambient specifications, filter lifetime and lens warranty
<b>Fastest AMC sampling service</b>	In and out of the cleanroom within one work shift  Most AMC classes sampled at low ppt levels in four hours
<b>ISO/IEC 17025 accredited services — a competence standard for testing laboratories</b>  Cert. 2578.01	Confidence in data and detection limits: <ul style="list-style-type: none"><li>• On-site sample operators trained and certified for sampling — no customer involvement necessary</li><li>• Detection limits are statistically evaluated at 99% confidence</li><li>• Inter-laboratory comparisons and traceable standards ensure highest accuracy</li></ul>
<b>AMC filter and applications expertise</b>	Service complements a comprehensive suite of Entegris contamination control solutions and enables development of customized products  Technical discussion and consultation enables most effective contamination control solutions

## SPECIFICATIONS

AMC CLASS	ANALYTES	SAMPLE TRAPS	ANALYTICAL METHOD
Acids/anions	Chloride (Cl <sup>-</sup> ), nitrate (NO <sub>3</sub> <sup>-</sup> ), nitrite (NO <sub>2</sub> <sup>-</sup> ), sulfate (SO <sub>4</sub> <sup>2-</sup> ), sulfite (SO <sub>3</sub> <sup>2-</sup> ), phosphate (PO <sub>4</sub> <sup>3-</sup> ), acetate (CH <sub>3</sub> COO <sup>-</sup> ), formate (HCOO <sup>-</sup> )	DI water impingers or dry absorbent traps	Ion chromatography (IC)
Bases/cations	Ammonium (NH <sub>4</sub> <sup>+</sup> )	DI water impingers or dry absorbent traps	Ion chromatography (IC)
HMW organics/refractories	Nonvolatile (condensable) organic compounds with a retention time of benzene and higher	Tenax® TA	Gas chromatography/mass spectrometry with automated thermal desorption (GC/MS-ATD)
LMW silicon	Low molecular weight (volatile) silicon compounds that are not trapped with Tenax®: TMS, HMDSO, D3	Entegris proprietary traps	GCMS/liquid micro-extraction (LME)

### Physical Specifications

Sample time	4 hours, plus 30 minutes each for setup and break-down Supply gas testing requires 24 hours of purging of sample port and line prior to sampling
Equipment	Battery-operated, customized equipment Materials with proprietary manufacturing, cleaning and coatings
Reporting limits*	0.1 µg/m <sup>3</sup> for all compounds and applications

\*Reporting limits are OEM-imposed and not the same as analytical method detection limits. Lower reporting limits may be requested for specific applications.

### Nikon-Specific Services

Part number	Service	Sample port	Reporting limit	Frequency
ASVC001-03	Nikon specification Acids Bases HMW organics	Chemical filter inlet and/or outlet or ambient/subfab/laser	0.1 µg/m <sup>3</sup>	As per Nikon requirements
ASVC001-04	Nikon specification Acids Bases HMW organics and LMW silicon	Chemical filter inlet and/or outlet or ambient/subfab/laser	0.1 µg/m <sup>3</sup>	As per Nikon requirements
ASVC001-05	Nikon specification LMW silicon only	Chemical filter inlet and/or outlet or ambient/subfab/laser	0.1 µg/m <sup>3</sup>	As per Nikon requirements

#### FOR MORE INFORMATION

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#### Corporate Headquarters

129 Concord Road  
Billerica, MA 01821  
USA

#### Customer Service

Tel +1 952 556 4181  
Fax +1 952 556 8022  
Toll Free 800 394 4083

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