



Member Update Presentations NAATBatt 2022 February 8, 2022

Mike Nakonechny
Director, Sales & Marketing

NSL Analytical Services, Inc.
4450 Cranwood Parkway, Cleveland, OH 44128
nslanalytical.com

Company Synopsis

NSL Analytical is an independent, ISO 17025 accredited materials testing laboratory that provides chemical, physical and metallurgical testing for metals, minerals, polymers and engineered ceramics.

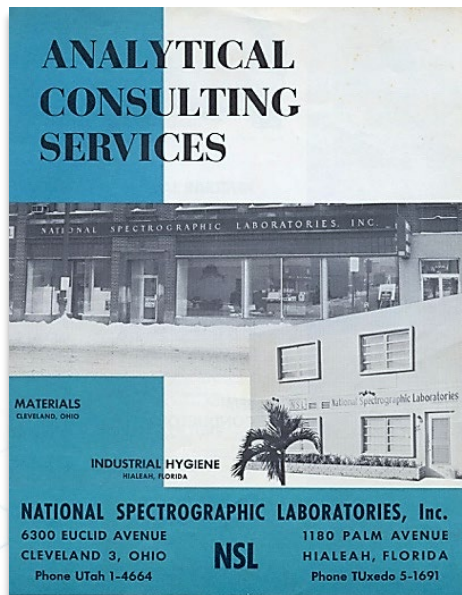
With over 75 years of experience, our team of chemists, metallurgists and laboratory specialists focuses on **Trust**, **Technology** and **Turnaround** to provide accurate and timely results to customers in nearly every major industry.

Whether you require material characterization, defect analysis, quality control or unique specialized testing, you can trust NSL to provide accurate and reliable results **on-time, as promised.**



Company History

Founded in 1945 as **N**ational **S**pectrographic **L**aboratories, Inc.



Introduced the first spectrograph for trace elemental analysis

- *High temp nickel alloys (aerospace)*
- *Various ceramics (electronics)*
- *Zircaloy (nuclear)*

...and still based & headquartered in Cleveland, OH





ICP Lab at NSL Analytical

Capabilities

Comprehensive Analytical Laboratory with Powder Characterization

- Wet Chemistry
- ICP-OES, ICP-MS
- GF-AA, CV-AA
- DC-ARC
- Spark-OES
- LECO
- IC
- XRF, XRD
- FTIR
- TGA
- DSC
- GC, GC-MS
- UHPLC
- LC-MS/MS
- Particle Size Distribution
- Particle Shape
- Powder Density, Porosity
- BET Surface Area
- Powder Flow, Rheology
- Powder Moisture Content

Capabilities

Metallurgical Laboratory with Engineering Services

- Optical Microscopy
- SEM-EDS with Remote Access
- Metallographic Cross-Sections
- Microstructural Evaluations
- Laboratory Heat Treatments
- Fractography
- Reverse Engineering
- Failure Analysis
- Machine Shop
- Specimen Preparation
- Tensile Testing
- Compression Testing
- Charpy Impact Testing
- Hardness Testing
- Microhardness Testing
- Bend Testing

Accreditations & Approvals

Accreditations



Approvals

- GE S-400
- NIAC
- NUPIC
- 10 CFR 50 Appx. B
- 10 CFR Part 21
- ASME NQA-1
- Boeing D1-4426
- CPSC
- GE Medical
- Parker Hannifin

Approvals

- P&W Aircraft Engine
- Eaton Aerospace
- GE Energy
- Honeywell
- Lockheed Martin
- Westinghouse Nuclear
- GE Transportation
- Medtronic
- SAFRAN AQPS 525



Compliance Testing

- **RoHS**

- Materials screening and alloy identification by hand-held XRF
- S, Br and other halogens by IC
- Cr⁶⁺, Pb, Cd, Hg analysis by UV-Vis, ICP/ICP-MS and CV-AA
- PBB, PBDE and phthalates screening by GC-MS



- **CPSC**

- Lead, heavy metals and phthalates in children's products



- **Prop 65**

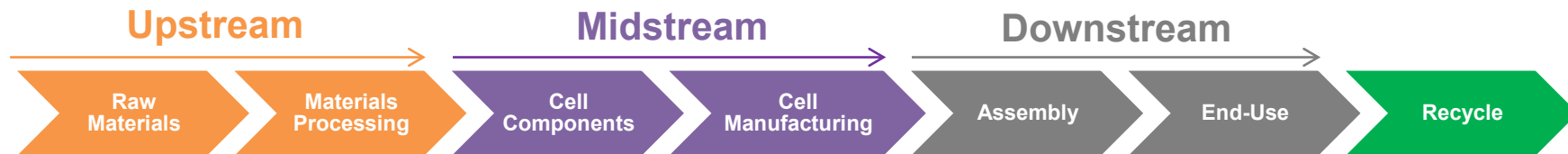
- Reports with reference to prior CA settlements
- 20 elements in inorganic and metalorganic compounds
- Cl and F in inorganic and halogenated organic compounds
- Phthalates, fire retardants, BPA, PFOS, PFOA, PBB, PBDE



Professional Affiliations



Battery Supply Chain



-  Chemical Composition
-  Powder Analysis
-  Quality Control
-  Materials Evaluations
-  Process Development
-  R&D Support
-  RoHS / REACH / EHS



Contact Information

Mike Nakonechny
Director, Sales & Marketing
mnakonechny@NSLanalytical.com
M +1.224.221.7416

Chuck Hokes
Business Development
chokes@NSLanalytical.com
M +1.216.905.0620





Thank You!

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