



**Assembly Materials Designer
and Manufacturer**



We Believe that **MATERIALS SCIENCE** Changes the World

Almost every great advancement in technology can be attributed to a breakthrough in materials science. Since the company's founding in 1934, Indium Corporation has been driven by its curiosity to look at materials from a different perspective—transforming the ordinary into the unexpected.



Ross Berntson
President and COO



It is our culture—
The Indium Way—that
continually supports our
commitment to changing
the world through
materials science.

Greg Evans
Chief Executive Officer

The Indium Way.
respect. appreciation. achievement.

Code of Conduct

Indium Corporation's professional commitment to our customers, our peers, our organization, and ourselves includes a defined **Code of Conduct** that covers:

- Ethics
- Workforce
- Health and safety
- Environment
- Management systems

Indium People Care

We're also active in our local communities through volunteering, sponsorships, and mentoring.



Since 1863...

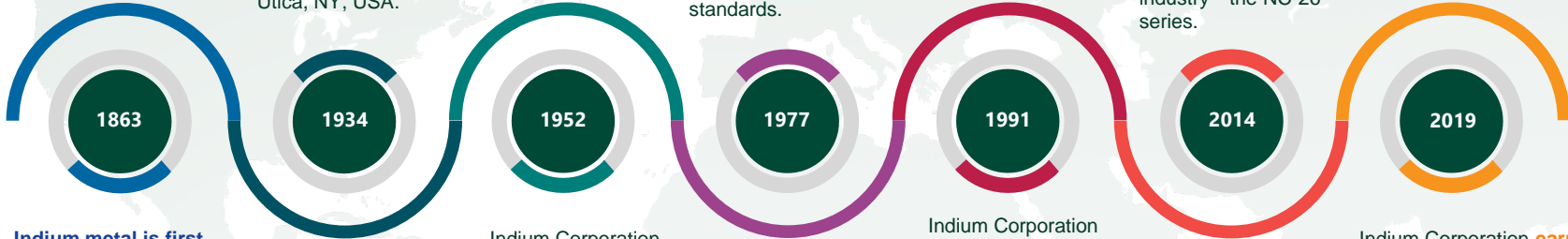


Indium Corporation **begins the development of solder pastes**—the first step in a long history of developing high-reliability solder pastes that address industry challenges, comply with regulation updates, and surpass industry testing standards.



Indium Corporation **develops the first ultra-low residue no-clean flip-chip fluxes** for the semiconductor industry—the NC-26 series.

Indium Corporation is founded at 805 Watson Place, Utica, NY, USA.

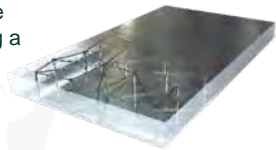


Indium metal is first discovered in 1863 by Ferdinand Reich and Hieronymus Theodor Richter. For years, the capabilities of this incredible resource were unknown until Dr. William S. Murray investigated its physical and chemical properties in 1924 in Utica, NY, USA.

Indium Corporation develops a commercially-viable process for the manufacture of precision solder preforms, enabling the mass production of alloy-junction transistors.



Indium Corporation develops and introduces InFORMS® solder preforms, which solve substrate tilt by providing the most uniform bondline control—offering a >2X increase in reliability.



Indium Corporation earns ISO/IATF 16949 management system certificates for all of its solder paste facilities in Clinton and Utica, NY, USA; Singapore; Milton Keynes, UK; and China—as well as the company's headquarters—reaffirming Indium Corporation's materials are produced with the utmost quality to ensure the reliability of customers' finished goods.

Our Commitment to Quality



- Provide **quality products** that meet or exceed customer needs, expectations, and requirements
- Create an **organizational culture** that focuses on meeting requirements and continuous improvement
- Have **products that are compliant** with relevant laws and regulations
- Focus on **defect prevention**
- Respond to **input from external and internal customers**
- Identify and provide **necessary resources**



Mike McNamara
Corporate Quality Director

Our Goal— Your Success

Increase our customers' productivity and profitability through premium design, application, and service of advanced materials.

Our Basis for Success

- Excellent product quality and performance
- Technical and customer service
- Cutting-edge material research and development
- Extensive product range
- Lowest cost of ownership



IATF 16949 Certifications



Clinton, NY, USA



Utica, NY, USA



Singapore



Milton Keynes, UK



Suzhou, PRC



Quality Certifications/Compliance

- IATF 16949:2016
- ISO 14001:2004
- ISO 9001:2015
- REACH
- RoHS
- IMDS

Corporate Policies

- International Traffic in Arms Regulations (ITAR)
- California Transparency in Supply Chains Act
- System for Award Management (SAM)
- Metal Supply Chain Policy
- Corporate Quality Policy
- Corporate Safety Policy
- Environmental Policy



We are a premier manufacturer and supplier of advanced materials

We develop, manufacture, and market:

- Solders
- Electronics assembly and packaging materials
- Pure indium, gallium, germanium, and tin
- Alloys and inorganic compounds

We offer a closed-loop reclaim system for these metals.

Our scientists and engineers work closely with our customers to:

- Increase yields
- Improve customer satisfaction
- Increase revenues
- Reduce defects
- Deliver high value and return on investment



**From One
Engineer
To Another®**

Innovative Research Labs



- **Advanced Materials and Process Development Labs:**

To fully characterize materials and processes in leading-edge technology applications.

- **Thermal Lab:**

To analyze the thermal resistance and conductivity properties of thermal interface materials to help determine the optimal applications.

- **Research and Development Labs:**

To advance materials science for the creation of new and unique products.

- **Tech Hubs:**

To provide for the effective development of electronics assembly expertise and customer service.



Dr. Ning-Cheng Lee
Vice President of Technology

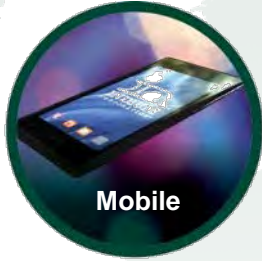
Markets Served



Auto



Defense



Mobile



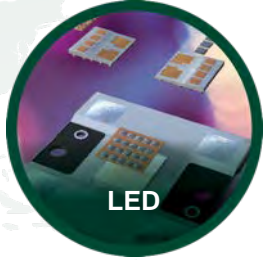
**Power
Modules**



Infrastructure



**Laser/
Fiber Optics**



LED



Medical



Photovoltaic



**Metal Refining
& Reclaim**



PCBA



**RF/
Microwave**



**Thermal
Management**



Downhole



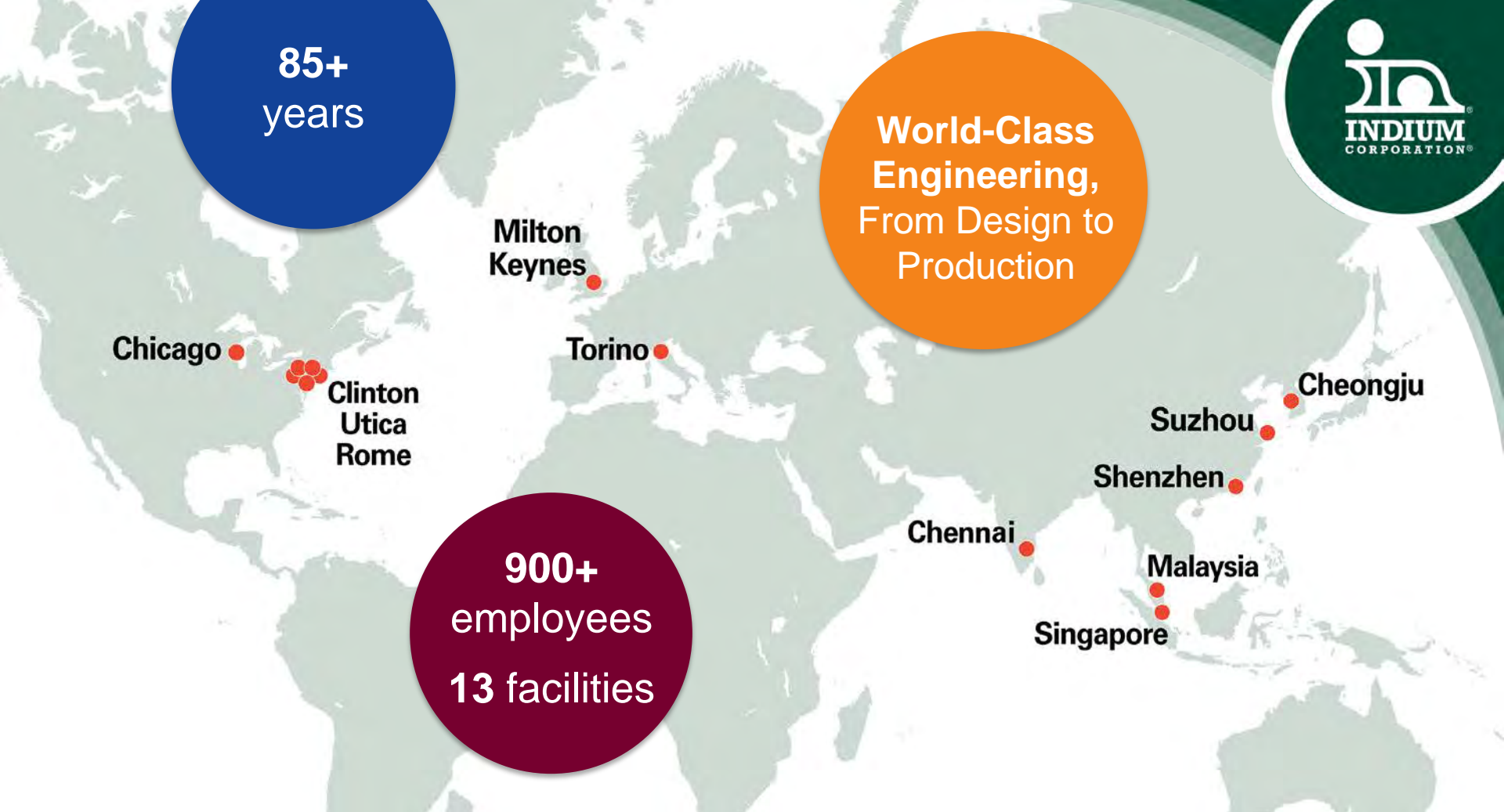
**Flat Panel
Display**



85+
years

**World-Class
Engineering,
From Design to
Production**

900+
employees
13 facilities



Chicago



Clinton
Utica
Rome

Milton
Keynes

Torino

Chennai

Singapore

Malaysia

Shenzhen

Suzhou

Cheongju

CUTTING-EDGE

Semiconductor & Advanced Assembly Materials

Our materials enable the manufacture of reliable products that endure the inevitable physical shocks and thermal stresses associated with electronics devices in applications from the IoT mobile devices—to next-generation, low-energy servers—to automobile electronics.

We provide solutions for:

- Heterogeneous integration/system-in-package
- 2.5D and 3D devices
- Chip-on-wafer and interposer
- Flip-chip on substrate and lead-frame
- Ball-grid array (BGA) and wafer-/panel-level packages
- Mini/microLED devices
- Power/analog discretes and small modules (<600V)
- High-voltage power modules (>600V)
- Specialty small component assemblies



Sze Pei Lim
Global Product Manager,
Semiconductor and
Advanced Materials



www.indium.com/SAAM

ADVANCED Electronics Assembly Materials

The electronics industry continues to rapidly evolve to increasingly smaller, more sophisticated devices with increased **power**. Indium Corporation is known as the global leader in R&D, product performance, technical service, and process optimization. We are also partners with most of the world's leading electronics manufacturers.

Our high-reliability solutions include:

- Solder pastes
- Flux-cored wires
- Wave solder fluxes
- Bar solder
- Tacky fluxes
- Solder preforms
- PoP fluxes and pastes
- Among others ...



Chris Bastecki
Director of Electronics
Assembly Materials

www.indium.com/solders

PRECISION

Engineered Solder Materials

Our precision solder preforms are available in a wide range of problem-solving alloys, with exacting tolerances and creative packaging **to enable creation of next generation devices.**

We provide solutions for:

- Reflow of temperature-sensitive components
- Voiding
- Solder starvation
- CTE mismatch
- Mechanical and electrical reliability
- Bondline planarity



Carol Gowans
Product Manager



www.indium.com/preforms

PREMIER

Thermal Interface Materials



Indium Corporation's high-performance metal-based thermal interface materials (TIMs) **provide industry-leading thermal performance and overall product life.** Our innovations have expanded upon the high thermal conductivity of metal by creating unique patterning options and hybrid solutions that eliminate the interfacial resistance challenges normally associated with metal TIMs.

Our research has created critical thermal management products:

- Heat-Spring® metal TIMs
- Liquid metal alloys
- Solder preforms
- Pre-fluxed preforms



Tim Jensen
Senior Product Manager

Andy C. Mackie, PhD, MSc
Principal Engineer and Manager,
Thermal Interface Materials Applications

www.indium.com/TIMs

LEADING

Metals & Compounds

From the mine to product packaging, we set the standard for the processing of indium, germanium, gallium, and tin. Quality is assured because we control the process from the very first step.

Indium Corporation is the world's premier supplier of:

- Commercial-grade and ultra-high-purity indium metal
- Indium compounds
- Germanium metal and compounds
- Gallium metal and compounds
- Tin metal and alloys
- Fusible alloys, including Field's metal
- Targets
- Reclaim services



Donna Vareha-Walsh
Director of Sales and Global Supply
Chain and Trade Compliance



www.indium.com/metals
www.indium.com/compounds

PROGRESSIVE

High-Temp Solder Materials

When even 10ppm of contamination can cause process and application failures—quality counts. **We cast our own alloys, which enables us to closely control the process from start to finish and ensure purity.** That is why we are a leading innovator of joining and bonding materials for medical, aerospace, optoelectronics, and automotive applications.

High-temperature gold solder materials deliver:

- Highest tensile strength of any solder
- Compatibility with subsequent reflow processes
- Pb-free and RoHS compliance
- Superior thermal conductivity
- Resistance to corrosion
- Superior thermal fatigue resistance
- Good joint strength
- Excellent wetting properties
- Resistance to oxidation



Jeff Anweiler
Senior Product Manager

www.indium.com/high-temp



Contact our engineers: askus@indium.com
Learn more: www.indium.com