

MEET AMERICHEM INNOVATION

POLYMERIC ALLOY FOR HIGH PERFORMANCE

Engineered for High Performance & Customized for Your Application



www.Americhem.com



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Engineered Material Balance for Demanding Applications

ADVANCED ALLOY PLATFORM TO ALIGN PERFORMANCE, PROCESSING, AND RELIABILITY

Americhem is a global leader in specialty custom compounding, partnering with innovators across highly regulated industries to solve complex material challenges. With deep expertise in polymer science, processing, and compliance, Americhem designs advanced material solutions that balance performance, manufacturability, and reliability. As application requirements continue to rise—demanding higher heat resistance, durability, transparency, and consistency—traditional single-polymer approaches often fall short. Americhem’s engineered High Performance Alloy platforms bridge these gaps, delivering tailored solutions optimized for real-world performance.

AMERICHEM OFFERS THE FOLLOWING BENEFITS AND MORE:

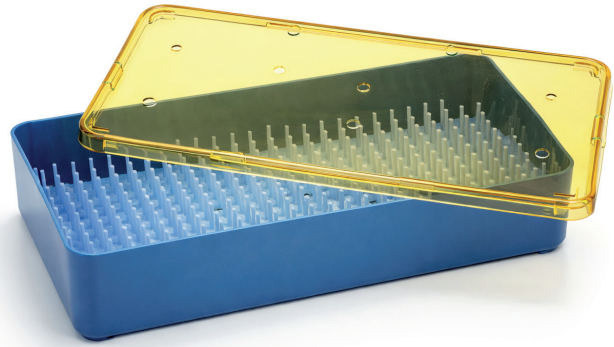
REGULATORY COMPLIANCE
Americhem develops materials for highly regulated industries worldwide

CUSTOMIZATION
Americhem offers a wide range of options, allowing customers to tailor their material accordingly

QUALITY & PERFORMANCE
Delivering unmatched quality and exceptional performance, combining durability, precision, and versatility

EXPERTISE & INNOVATION
Leveraging years of industry experience and expertise to develop solutions

GLOBAL REACH
Americhem offers consistent quality and service to customers worldwide



THE CHALLENGE: PERFORMANCE TRADE-OFFS

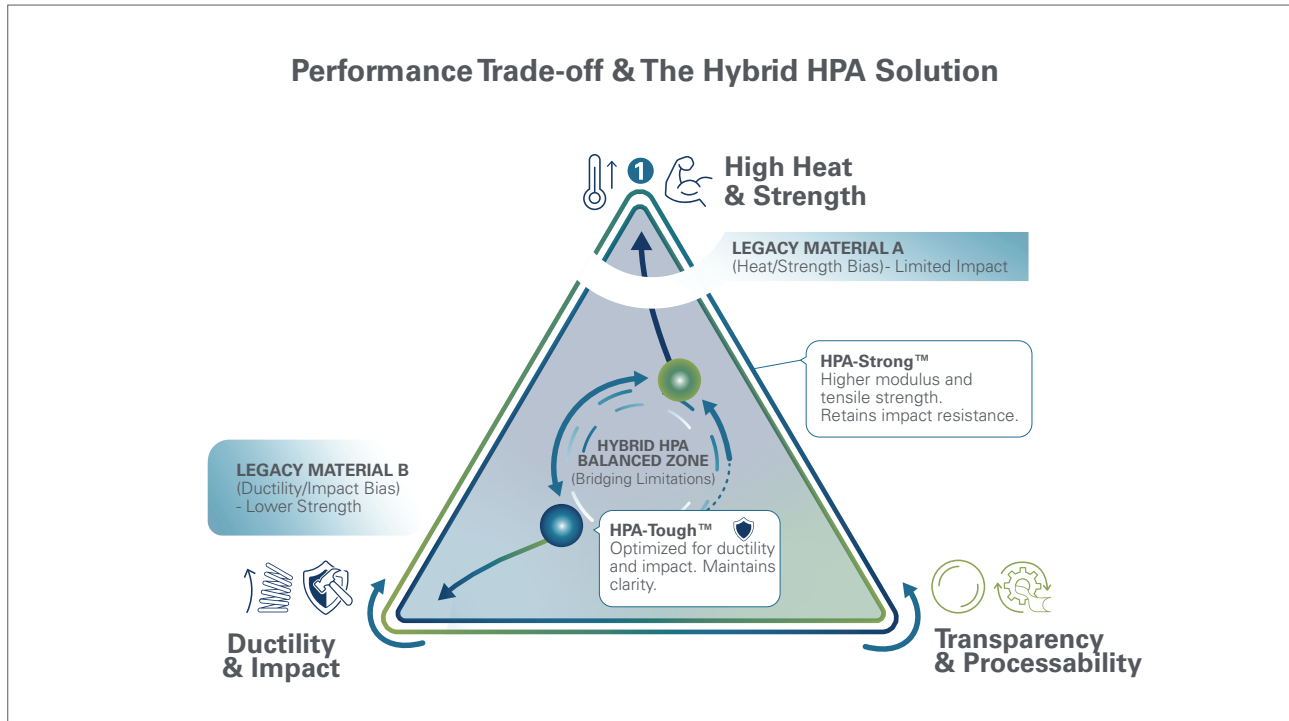
Designers of advanced components are often forced to choose between strength and ductility, heat resistance and processability, or performance and cost. Traditional high-performance polymers excel in specific areas—but rarely deliver balanced performance across all requirements.

- APPLICATIONS:**
- Sterilizable Applications
 - Aerospace Interior
 - Equipment Enclosures
 - Semiconductor Handling
 - High-Heat Components
 - Electrical Connectors

- BENEFITS:**
- + Optimized Ductility & Strength
 - + Superior Processability
 - + High Clarity

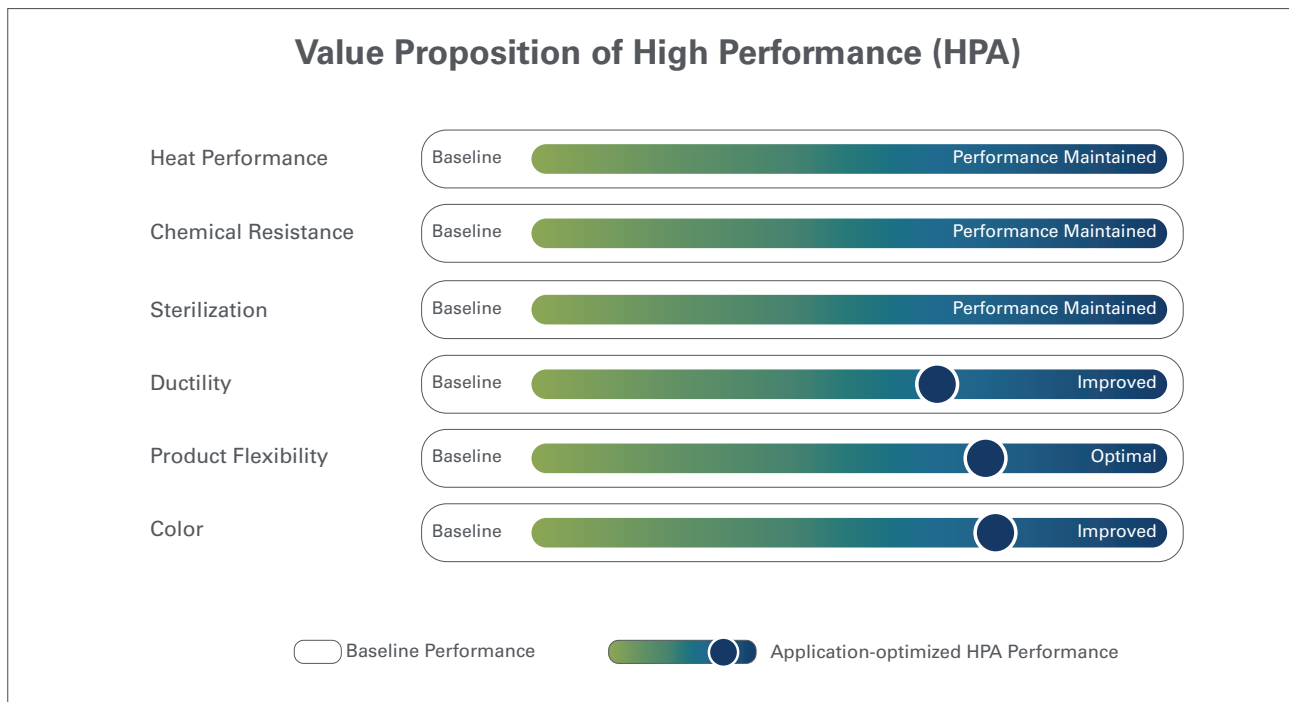


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BALANCING PERFORMANCE WHERE IT MATTERS

Americem’s High Performance Alloy (HPA) is not a single formulation, but a material platform designed to align performance with application priorities. By controlling the balance between complementary material behaviors, HPA formulations maintain critical heat, chemical, and sterilization performance while enabling targeted improvements in strength, toughness, processing flexibility, and appearance.



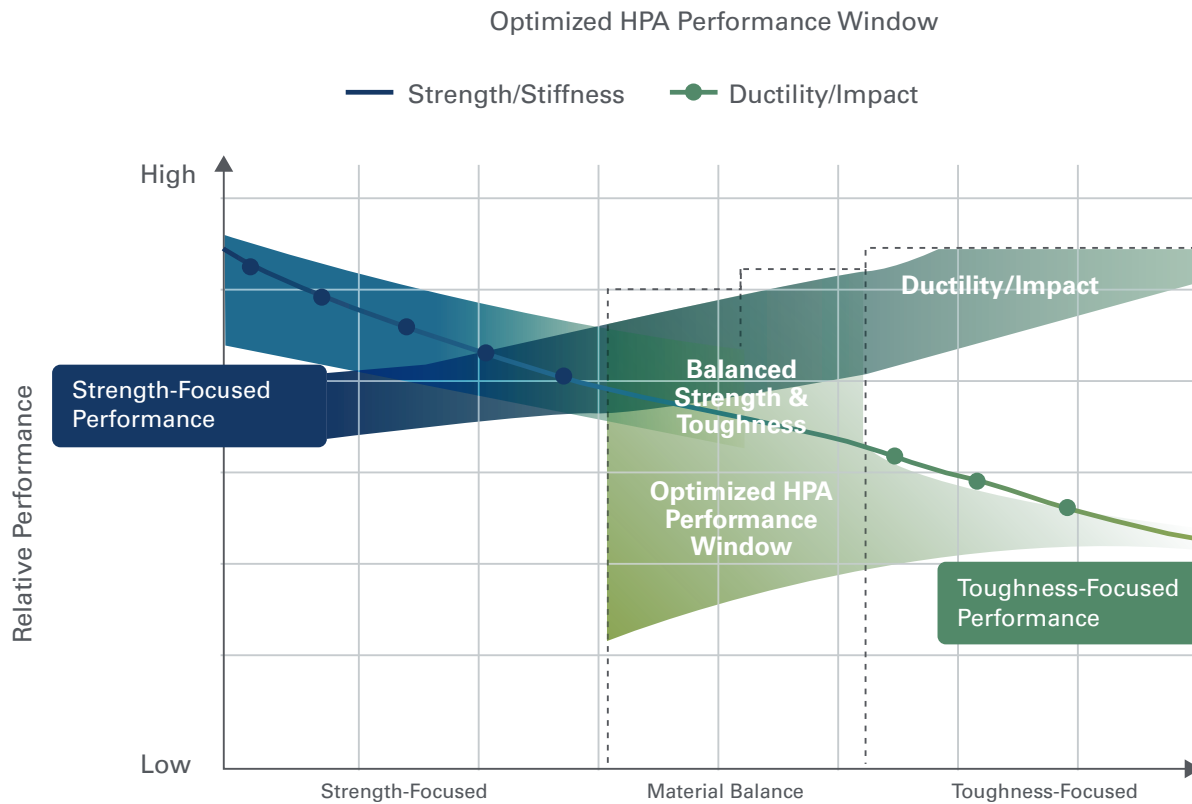
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UNDERSTANDING THE PERFORMANCE ZONE

The performance zone illustrates how material properties shift as strength and toughness are balanced. Traditional materials tend to follow a trade-off curve, where increasing stiffness and strength often reduces ductility and impact resistance, while highly ductile materials typically sacrifice dimensional stability and load-bearing capability. These trade-offs force designers into material compromises that rarely align with real-world application demands.

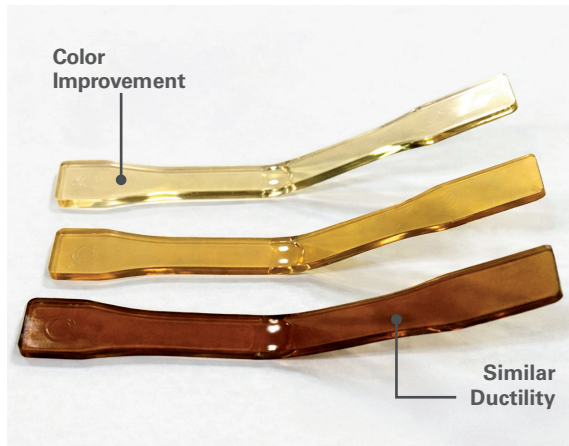
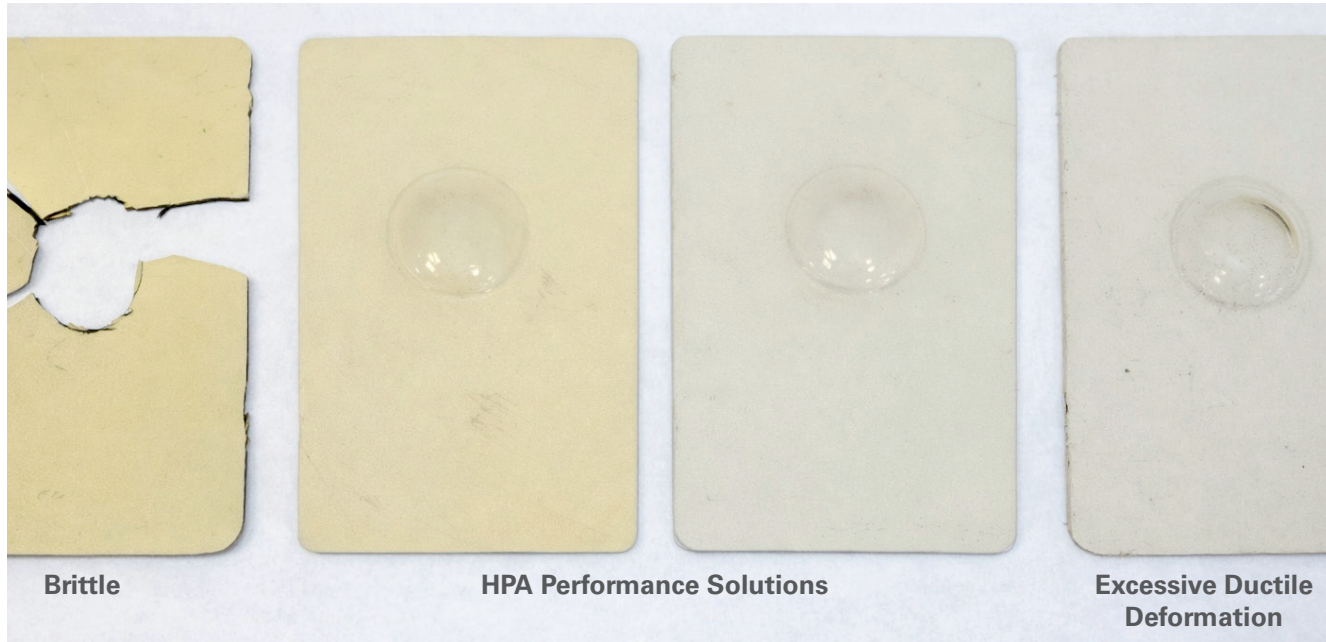
Americhem's High Performance Alloy (HPA) platform addresses this challenge by operating within a defined **performance window** where both strength and toughness are maintained at meaningful levels. This optimized window—highlighted at the center of the chart—represents balanced performance that cannot be achieved with single-polymer solutions alone.

Within this zone, HPA materials resist excessive deformation while absorbing impact energy through controlled, non-catastrophic failure. This behavior enables more predictable performance in applications exposed to impact, repeated handling, or long-term mechanical loading. By controlling material balance rather than optimizing a single property, the HPA platform allows designers to select performance profiles aligned with application priorities, reducing failure risk and improving overall reliability.



HPA solutions bridge the gap between brittle strength and excessive ductility through controlled material balance.

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CONTROLLED RESPONSE UNDER IMPACT

In Gardner impact testing, optimized HPA solutions demonstrate controlled deformation rather than catastrophic failure. Compared to brittle traditional materials, HPA solutions plaques shows no cracking. Compared to highly ductile single-polymer materials, HPA exhibits reduced deformation, indicating higher strength while maintaining toughness.



BENEFITS

- No Brittle Fracture
- Energy absorbed through Controlled Deformation
- Consistent Performance after Sterilization

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TWO OPTIMIZED PERFORMANCE PROFILES

Within the HPA platform, Americhem has developed optimized solution spaces that represent common performance priorities:

- **Strength-Focused Solutions:** Designed for applications requiring higher stiffness, dimensional stability, and cost efficiency while maintaining heat and chemical resistance.
- **Toughness-Focused Solutions:** Optimized for improved ductility, impact resistance, processing flexibility, and visual clarity without compromising thermal performance.

These profiles represent starting points within the HPA platform and can be further refined to meet specific application requirements.

Sustainability & Material Efficiency

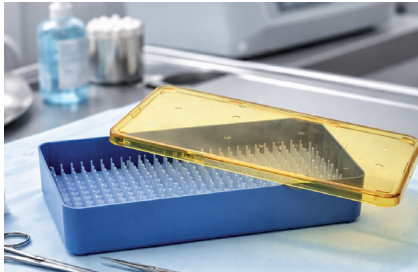
HPA solutions support sustainability through extended service life, improved durability, and material efficiency. Balanced performance enables thinner designs, metal replacement, reduced part failure, and lower scrap—helping reduce material use and waste across demanding applications.

At the core of our product development is a strong commitment to sustainability and environmental stewardship. We understand the importance of creating products that not only perform exceptionally but also contribute positively to the environment. HPA solutions support sustainability through extended service life, improved durability, and material efficiency. Balanced performance enables thinner designs, metal replacement, reduced part failure, and lower scrap—helping reduce material use and waste across demanding applications.



AMERICHEM'S HIGH PERFORMANCE ALLOY (HPA)

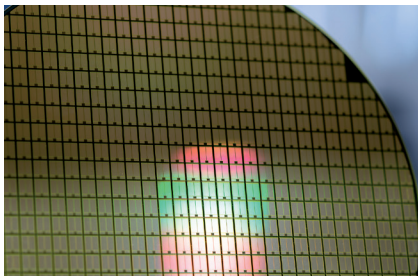
Americhem's High Performance Alloy (HPA) solutions are readily available in a wide variety of industries worldwide, including:



Healthcare: Designers of surgical trays, medical equipment housings, diagnostic system enclosures, and sterilizable components need materials that withstand repeated thermal cycling, harsh disinfectants, and mechanical stress. This alloy maintains structural integrity under autoclave conditions while offering clarity for visual inspection and durable toughness to resist cracking and chipping.



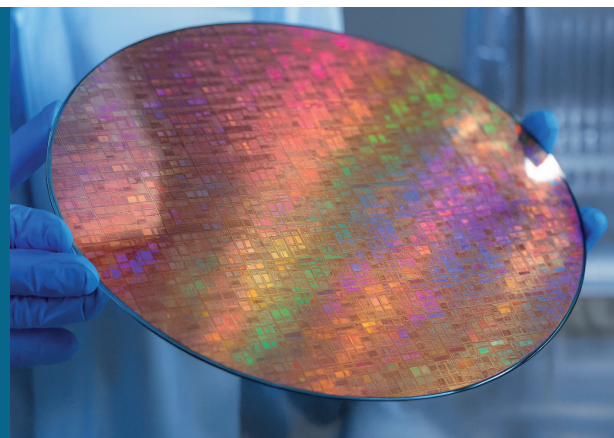
Aerospace: Interior components—from seat assemblies to window shade systems to wall panels—demand lightweight strength, flame/smoke/toxicity compliance, and aesthetic clarity. The alloy's improved processability enables thinner-walled parts and complex geometries, while its balanced stiffness and ductility reduce failure risks across long service lives.



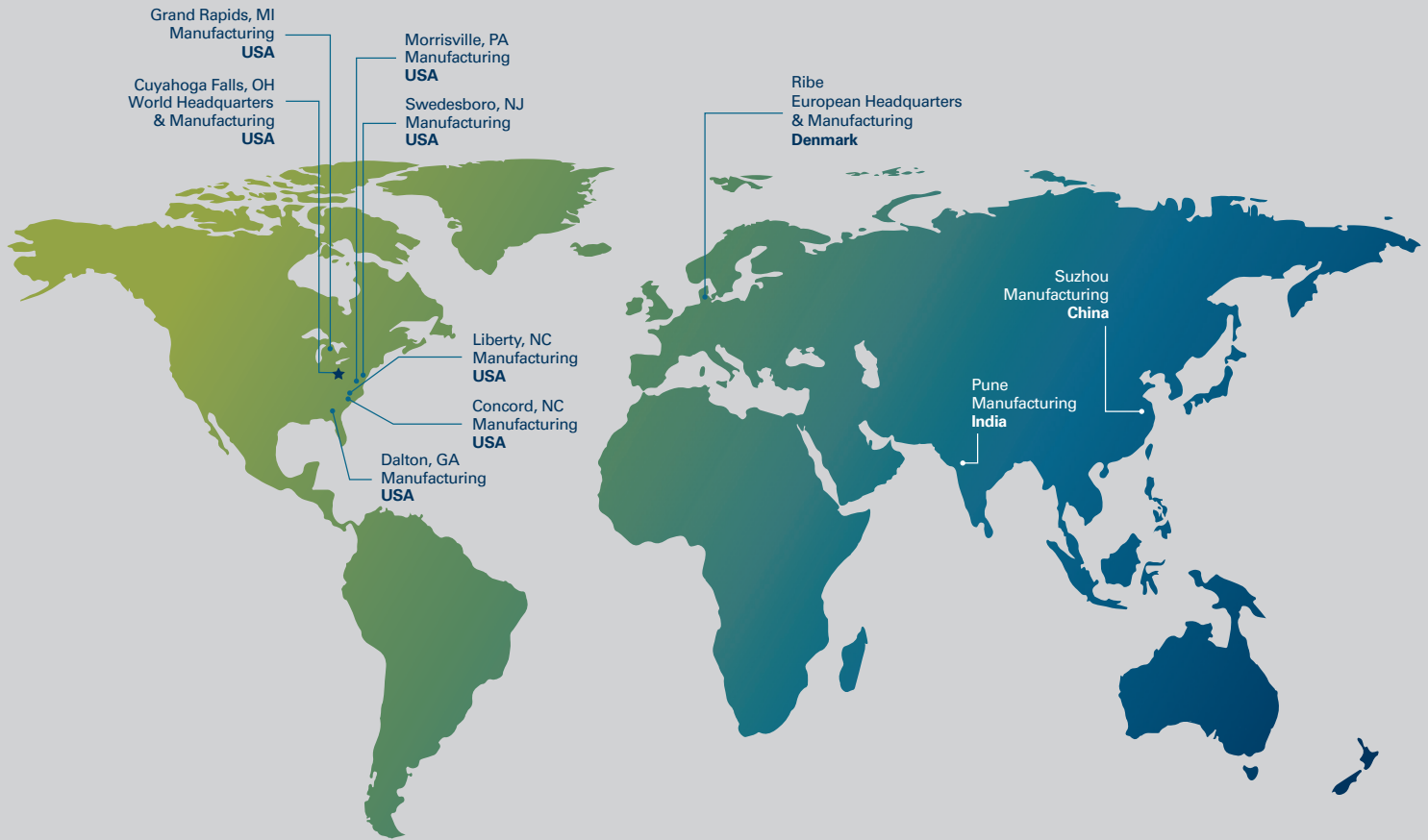
Electronics: Emerging electronics markets, including data-center infrastructure and wafer-handling systems, require high-temperature stability, cleanliness, and dimensional performance. The alloy's transparency and chemical resistance make it ideal for housings, carriers, and other components where visibility, reliability, and thermal endurance are mission-critical.

Let's co-engineer your next breakthrough.

Connect with Americhem's material experts early in your development process to explore custom formulations, validate performance, and build a high-performance solution tailored to your exact application needs.



A GLOBAL LEADER IN CUSTOM COMPOUNDING



BATCH TO BATCH.
MARKET TO MARKET.
CONTINENT TO CONTINENT.

From our headquarters in Cuyahoga Falls, Ohio, to our manufacturing locations and sales offices across the world, our expansive footprint provides global reach for your organization's needs. Not only are we dedicated to getting your materials where they need to be, when they need to be there, we work behind the scenes to reduce your supply risks. In addition to our network of plants, regulatory and compliance teams, we have contingency plans and support services in place to secure your product against unforeseen interruptions.



Explore our full capabilities
at americhem.com