



INGEVITY

Foundation

- 2016

Employees

- 2,050

Branches

- Performance Chemicals – Engineered Polymers

Key materials

- Capa monomer
- Capa polyols
- Capa thermoplastics

Key products

- Development and production of biodegradable products that enhance other bioplastics' biodegradability, processability and mechanical properties.



Enhance your bioplastic formulations with Capa® technology

WHO WE ARE AND WHAT WE DO

Ingevity (NYSE: NGVT) is a leading provider of specialty chemicals, high-performance carbon materials and engineered polymers. We develop, manufacture and bring to market products and processes that purify, protect and enhance the world around us.

What we do best is create value-added products, largely from renewable raw materials, that solve customer problems. By applying principles of resource efficiency to our most critical raw materials—crude tall oil (CTO), lignin and hardwood sawdust—we not only convert these materials into high-value products for our customers, but ultimately, into products that often benefit the environment.

ONE MOLECULE, MILLIONS OF OPPORTUNITIES

Ingevity is the world leader in caprolactone technology and innovation, with a 40-year history of enhancing performance in a wide variety of end-use products. Ingevity supplies Capa products into multiple markets, often helping compounders and converters produce safer, more sustainable and higher performing products for their customers.

WHAT ARE CAPA CAPROLACTONES?

The Capa portfolio is a family of innovation-driven products that address industry drivers and provide tailored solutions to customer challenges. Capa enables high-performing products that are often:

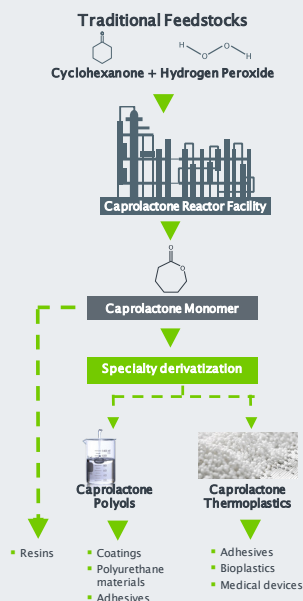
- More flexible
- More durable
- More resistant to water, chemicals and weather
- Biodegradable
- Food-contact approved

Ingevity's caprolactone derivative technologies are made possible through a unique ring opening polymerization process, whereby caprolactone monomer can be derivatized into proprietary, value-added polyols and thermoplastics.

WHAT ARE CAPA CAPROLACTONES?

With the world's largest caprolactone plant, Ingevity provides unique manufacturing capabilities including:

- Hydrogen peroxide supply available on site via pipeline
- Well-established continuous improvement program
- Well maintained assets demonstrated by high plant reliability
- Dedicated Innovation lab and personnel
- On-site pilot reactor
- Technical services including product and application development





INGEVITY

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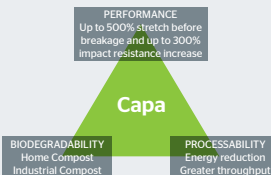
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CAPA THERMOPLASTICS IN BIOPLASTICS

Ingevity's Capa thermoplastic technology enhances the biodegradability of single-use plastics. Incorporating Capa into bioplastics blends has been proven to accelerate the biodegradation rate, helping reduce plastic landfills in the environment. Additional benefits include unique mechanical properties and processability improvements.

THERMOPLASTICS PERFORMANCE PYRAMID

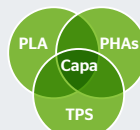
Capa thermoplastics chemistry offers a combination of exceptional biodegradability with great stability during the working life of the formulated material. Melt processability and final mechanical properties of bioplastics are greatly enhanced by the addition of Capa thermoplastics.



PERFORMANCE CHARACTERISTICS BY MATERIAL

Addition of Capa thermoplastics enhances the performance of other bioplastics by

- Accelerating biodegradation of the blend
- Improving processability, increasing the operating window of many materials
- Increasing mechanical properties of traditional bioplastics, in particular flexibility which is maintained even at very low temperatures



PERFORMING PLASTICS THAT COMPLETELY BIODEGRADE

How Ingevity's Capa thermoplastic caprolactone technology is transforming biodegradability for single-use plastics



Ingevity's mission is to manufacture value-added products that purify, protect and enhance the world around us. And now, we hope to help the world conquer its plastics problem, one take-out container and utensil at a time.



100% plastic biodegradability after 40 days with no toxic chemicals left using Capa caprolactone technology in home and industrial composting⁽¹⁾



more stretch before breaking

increase in impact resistance

is more accessible with Capa

⁽¹⁾Percent biodegradation according to European standard outlined in EN 13432

⁽²⁾Research Institute for Applied Mechanics, Kyushu University, Japan: tensile strength of bioabsorbable PLA/PCL blend measured in MPa

⁽³⁾Ingevity: fracture of absorbed energy measured in kJ/m²