



PURIFY | PROTECT | ENHANCE

Capa® Caprolactones for Bioplastics

Turning biopolymers into
high-performing plastics





We are Ingevity

Ingevity provides specialty chemicals, high-performance carbon materials and engineered polymers that purify, protect and enhance the world around us. Through a team of talented and experienced people, Ingevity develops, manufactures and brings to market products and processes that help customers solve complex problems. These products are used in a variety of demanding applications, including asphalt paving, oil exploration and production, agrochemicals, adhesives, lubricants, publication inks, coatings, elastomers, bioplastics and automotive components that reduce gasoline vapor emissions.

Ingevity is the world leader in the production and development of caprolactone technology under the Capa® family of products. For the last 40 years, our experienced team and high-quality caprolactone offerings have earned the reputation of a trusted innovation partner that helps customers create winning formulas. Capa products add value to current formulations and enable customers to create new higher-performing products in the areas of coatings, polyurethane elastomers, adhesives, and bioplastics.

One molecule, millions of opportunities

The Capa product portfolio includes Capa monomer, polyols and thermoplastics. The multifunctional nature of our Capa polyol and thermoplastic products is the result of a unique ring-opening polymerization process used during manufacturing. The process is conducted under highly controlled conditions that eliminate the production of unwanted byproducts such as water, and creates caprolactones with a low acid value, closely defined functionality, low polydispersity and a high degree of reproducibility. How can our array of Capa caprolactones enhance the processing and performance advantages of your products, or open new product or market opportunities for your business?



Number one worldwide
in caprolactone and derivatives



Best in industry
manufacturing capabilities.



Dedicated innovation experts
focused on continued process and application development.



World class R&D facilities
to develop downstream derivatives that meet customer and market needs.



Global sales force
with close customer relationships that support product development



For high-performing, biodegradable bioplastics

We use increasing amounts of plastic in our everyday lives. Biodegradable polymers in plastics are particularly attractive because they do not pollute the environment and have a lower energy footprint than other polymer alternatives.

Capa thermoplastics are an impressive biopolymer modifier for packaging, bags and films, and paper coatings. Capa benefits formulations by enhancing the mechanical properties of polymers for easier processing, greater durability and flexibility.



Rigid packaging

Exciting developments in plastic packaging that extend shelf life and facilitate our grab-and-go lifestyle are here to stay. But increased plastic packaging does not have to mean increased damage for our communities and the environment. Your polymer choice can make a positive difference.



Bags and films

Biodegradable polymers have become an innovative way to reduce the environmental impact of films and carrier and compostable bags. Many local authorities, supermarkets and consumers are looking for alternative solutions that offer more eco-friendly packaging compared to less sustainable plastics, which often end up in landfills.



Paper coatings

The continued growth of fast-food chains and food catering options has led to an exponential rise in plastic waste and raised the issue of sustainable waste management. Capa is a convenient and functional solution that satisfies many food safety and waste management requirements.

Capa thermoplastic caprolactones

Capa Grade	Appearance	Mol. Weight	OH value (mg KOH/g)	MFI (g/10 min) @80°C	MFI (g/10 min) @160°C	Melting point °C
Capa 6250	Granules	25,000	circa 5	34	>250	58-60
Capa 6400	Granules	37,000	circa 4	16	>75	58-60
Capa 6500	Granules	50,000	circa 2	25	18	58-60
Capa 6500D	Granules	50,000	circa 2	25	18	58-60
Capa 6800	Granules	80,000	circa 1	0.3	2.4	58-60

Melt flow index measured with standard die (diameter of 2.095 mm), 2.16 kg weight, g/10 minutes at indicated temperature.



Processing advantages

Easy processing and formulation: Similar to LDPE and HDPE with no need to modify set-up.

Broad processing window: compared to other polymers.

Good compatibility: with other polymers and can be a property enhancer in some polymeric blends.

No need to pre-dry: saves time and money.

Thermally stable up to 190°C: shielding biopolymers from becoming unstable.

Low melting point: enables a lower overall processing temperature and a good dispersion blend.

Can be sterilized: by gamma rays if required.

Can act as a potential heat laminate: to paper, cardboard, leather, cotton and other natural fibers.



Performance advantages

No packaging degradation with use: Capa's hydrolytic stability ensures no decomposition or degradation upon contact with various food types.

Remains flexible in cold environments: Capa protects paper-coated products and reduces cracks in and waste from brittle formulations.

Is food and consumer friendly: Ingevity's caprolactones are food compliant with additional grease- and moisture-resistant properties, and are tough and durable yet soft to the touch.



Business advantages

Higher quality of final bioplastic material: means better brand recognition for your final product.

Better processing and stability: mean reduced waste.

The ability to compost at home: opens new business opportunities.

Ingevity

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