



Capa™ for bioplastics

Turning biopolymers into the plastic of natural choice

The perfect blend for bioplastics

- Significantly enhances bioplastic performance
- Improves mechanical properties for greater durability
- Excellent low temperature performance
- Biodegradable and stable
- Certified compostable with fast biodegradation

Enhancing biopolymer performance & biodegradability

One molecule. Millions of opportunities.

Perstorp is the world leader in the production and development of caprolactone technology under the Capa™ brand. Capa™ has been producing winning formulas for over 40 years, and is a known and trusted molecule. One molecule that can create millions of opportunities for the coating, elastomer, adhesive, sealant, and now bioplastic segments.

We devote 85% of our R&D to finding more sustainable solutions, so it is no surprise that we are innovating in bioplastics too. Capa™ Thermoplastics are biodegradable and come with a full spectrum of performance enhancing properties that make biopolymers the plastic of natural choice today.

Why choose Capa™ for bioplastics?

Improves the mechanical properties of bioplastics

Capa™ is hydrolytically stable allowing it to be used in many applications. It reduces brittleness, maintains its flexibility at low temperatures, provides excellent adhesion, is breathable yet has excellent durability, tear resistance & elongation.

Compatible biopolymer enhancer

Capa™ is compatible with biopolymers, such as PLA, PHA and starch improving their functional properties, especially toughness and flexibility enabling them to be competitive in film and packaging applications.

Food friendly

Capa™ is hydrophobic making it moisture resistant, and provides an excellent barrier to liquids and grease. It is hydrolytically stable in a wide range of pH to protect the integrity of food and liquids. Selected Capa™ products are EU food contact approved.

Biodegradable yet stable

Capa™ is certified compostable (EN13432) and 100% biodegradable often within 45 days, which is something of a record! Yet at the same time it is very stable through its useful life for reusable as well as one time use bioplastics.



Processing advantages

- Easy processing
- Thermally stable
- Low melting point
- No pre-drying

Let us help you find the right bioplastic formula

With our broad product range, full technical support and expertise we can help you find the perfect blend for your bioplastic success. We provide analytics, testing and troubleshooting, and can help develop more sustainable solutions. Our technical services include:

- Formulation development & improvement
- Application development
- On the spot service & consultancy

Contact us today to find out more at www.perstorp.com/bioplastics

Capa™ Thermoplastic polycaprolactones						
Grade	Approximate molecular weight	Appearance	OH value (mg KOH/g)	Melt Flow Index @ 80°C ¹⁾	Melt Flow Index @ 160°C ¹⁾	Melting range (°C)
Capa™ 6250	25,000	Pellets	circa 5	34	> 250	58-60
Capa™ 6400	37,000	Pellets	circa 4	16	> 75	58-60
Capa™ 6500	50,000	Pellets	circa 2	2.5	18	58-60
Capa™ 6500D	50,000	Pellets	circa 2	2.5	18	58-60
Capa™ 6506	50,000	Powder	circa 2	2.5	18	58-60
Capa™ 6800	80,000	Pellets	circa 1	0.3	2.4	58-60

¹⁾ Melt flow index measured with standard die, 2.16 kg weight, g/10 minutes at indicated temperature



Bags & Films

Biodegradable polymers are becoming an important solution to reducing the environmental impact of films, carrier bags and compostable bags. Preventing the use of unsustainable packaging, which often ends up in landfill sites, is a priority today for many supermarkets, local authorities and consumers.

Capa™ can be formulated to strengthen the case for bioplastic bags & films. Adding durability and excellent tear resistance,

alongside fast biodegradation, Capa™ improves biopolymer bags & films performance, both through-life and end-of-life.

Capa™ also gives bioplastic bags & films good sealability and printability, plus acts as a processing aid resulting in more efficient production. It all adds up to a complete package for storing, protecting and promoting products without compromising the environment.

New business opportunities

Film applications for food – Strong, durable and breathable material. Increases toughness in weak and brittle PLA and TPS based films.

Suitable for fridge & freezer applications – Maintains flexibility at low temperatures.

Disposables – plastic & compost bags – Moisture resistance and toughness with a rapid biodegradation makes Capa™ a perfect choice.

Agricultural films – Breathable films with the possibility to tailor-make the rate of biodegradation.

Performance advantages

Longer life – Excellent durability, tear resistance & elongation adds competitiveness in terms of less wastage, and complaints.

Breathable, soft & protective – Prevents condensation & promotes growth yet protects from bacteria and repels water. Capa™ reduces moisture sensitivity in biopolymer-based films to protect and prolong the application life. Highly stretchable and flexible with increased tactile softness. Breathable and adapts to every shape and form effortlessly.

Food friendly – Food compliant with excellent grease resistant properties. Capa™ provides an excellent barrier against liquids & grease. It is hydrophobic making it moisture resistant to protect biopolymer-based films through-life.

Stable & compostable – Bioplastics with Capa™ are stable throughout their useful life & compostable at end-of-life, which saves time, money & the environment. Particularly important in agricultural mulching films, which can be ploughed-in.



{ tear resistant }



Packaging

Exciting developments in plastic packaging that have extended shelf life, facilitated grab 'n go lifestyles, and re-invented brand relationships with their consumers are here to stay. More packaging does not have to mean more damaging for society and the environment. It depends on your polymer choice.

Biopolymer based packaging represents a smart choice for the environment, but not always for you. Packaging that cracks, splits, or deforms can create unnecessary wastage and a concern over its reliability. Bioplastic packaging with Capa™ inside gives consumers a durable, soft yet firm-to-the-touch experience. Creating confidence in the packaging and the brand, while fully protecting the integrity of the contents.

Capa™ makes bioplastic packaging hydrolytically stable throughout its useful life to ensure it never decomposes when in contact with foods, and in fact promotes a longer shelf life. At end-of-life Capa™ is certified compostable and offers very fast biodegradation returning the package back to nature instead of a landfill tip.

New business opportunities

Suitable for fridge & freezer applications – Package maintains flexibility at low temperatures for user convenience. Capa™ also reduces surface cracking.

Disposables – Controlled end-of-life for single use products, such as plates, trays, cups and cutlery.

Food packaging – Capa™ significantly extends the use of biopolymers in food packaging. Providing both improved mechanical properties, and controlled end-of-life in the final packaging for items such as, salads & vegetables, deli products, sandwiches, and confectionary.

Performance advantages

No packaging degradation in use – Hydrolytically stable ensures no decomposition or degradation in contact with food & liquids to protect the food's integrity and quality at all times.

Fast biodegradation & certified compostable – Superior biodegradation compared to other biopolymers. Capa™ enhances durability and stability, which is perfect for longer life packaging. Certified compostable with end-of-life options saves time, money & the environment.

Process friendly – Thermal stability to resist molecular degradation in processing and forming packaging.

Consumer friendly – Reduced brittleness reduces cracking in use and wastage. Biopolymer packaging with Capa™ is tough and durable yet soft to the touch.



{ cold flexibility }



Paper Coatings

The explosion in fast-food-chains, takeaway outlets, canteens and catering firms has dramatically grown the foodservice sector. This has led to an exponential rise in waste and raised the issue of sustainable waste management.

Finding a convenient functional solution that satisfies food safety needs and waste management requirements is where Capa™ comes in. Paper coatings with Capa™ are food compliant and provide a superior barrier to liquids and grease. Additionally Capa's excellent adhesion and surface bonding ensures the through-life integrity and shape of the paper-coated product, even in cold environments.

Being stable in use and compostable when used are the precise attributes that satisfy both the functional and environmental demands. Paper coatings with Capa™ provide a natural solution to handling waste efficiently to reduce the environmental impact in real terms.

New business opportunities

Fridge & freezer applications – Product maintains flexibility at low temperatures for user convenience. Capa™ also reduces surface cracking for items such as cold drinks and ice cream cups.

Disposables – Controlled end-of-life for single use items, such as paper plates, wrappers, trays and cups.

Food packaging – Capa™ significantly extends the use of biopolymers in food packaging. Providing both improved mechanical properties, and controlled end-of-life in the final packaging for items such as, salads & vegetables, deli products, sandwiches, and confectionary.

Need help?

Our bioplastics service is ready to support you. We can offer technical support, which includes analytics, testing and troubleshooting. We can help you with formulation development & improvement, your application development and even provide on the spot consultancy.

Contact us directly at perstorp.com/bioplastics



Performance advantages

Remains flexible in cold environments – Protects the paper coated products integrity by reducing cracking and rigidity, which in turn reduces scrap, waste and minimizes quality issues.

Excellent adhesion & high green strength – Superb bonding and easy adherence to most types of paper and paperboard surfaces. Paper coated packaging maintains its shape and strength in use.

Food compliant with grease & moisture resistance – Capa™ provides an excellent barrier against liquids & grease. It is hydrophobic making it moisture resistant to protect paper based products through-life.

Stable in use, compostable when used – Hydrolytically stable in contact with food & liquids to protect the food's integrity and quality at all times. Provides a more sustainable solution that reduces environmental impact and improves the environmental profile.



Your Winning Formula

The Perstorp Group, a trusted world leader in specialty chemicals, places focused innovation at your fingertips. Our culture of performance builds on 130 years of experience and represents a complete chain of solutions in organic chemistry, process technology and application development.

Matched to your business needs, our versatile intermediates enhance the quality, performance and profitability of your products and processes. This is how we enable you to meet market demands for safer, lighter, more durable and environmentally sound end-products – for the aerospace, marine, coatings, chemicals, bioplastics, plastics, engineering, and construction industries, as well as automotive, agricultural, food, packaging, textile, paper and electronics applications.

Our chemistry is backed by reliable business practices and a global commitment to responsiveness and flexibility. Consistent high quality, capacity and delivery security are ensured through strategic production plants in Asia, Europe and North America, as well as sales offices in all major markets. Likewise, we combine product and application assistance with the very best in technical support.

As we look to the future, we strive for the development of smarter and safer products and sustainable processes that reduce environmental impact and create real value in new chemical applications. This principle of proactive innovation and responsibility applies not only to our own business, but also to our work with yours. In fulfilling it, we partner with you to create a winning formula that benefits your business – as well as the people it serves.

Discover your winning formula at www.perstorp.com