



1 SEM-picture of an extrusion foamed film made from cellulose acetate.

2 Extrusion foaming of cellulose acetate film.

## FOAMED BIO-BASED PLASTICS LIGHTWEIGHT AND NATURAL!

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Bio-based plastics can already be a sustainable material option for a lot of applications, nowadays. Foamed bioplastic products are still in their infancy. Due to the reduced material use, however, they offer chances for resource savings and reduction in price. Our team of polymer chemists and plastics engineers develops foamed bioplastics for your product needs.

We are experienced in particle foam or extrusion foaming technologies. Our developments make use of a broad range of commercially available bioplastics like poly (lactic acid), other polyesters, or cellulose derivatives. The choice of material and technology is governed by availability, market needs, ecological aspects and economics.

### Keywords

- Extrusion foaming
- Particle foam beads
- Foam injection molding
- Sandwich structures
- Bio-based plastics
- Material and process development

### Industrial sectors

- Plastics converters
- Automotive and suppliers
- Packaging
- Building and construction
- Consumer products
- Mechanical engineering industry - plastics processing technology



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1 Plate cast from a bioplastic foam sheet.

2 Sandwich panel: wood fiber skins and cellulose derivate foam core fabricated in a one-step process.

### Technological specification

- Foamed bio-based thermoplastic resins
- Weight reduction
- Sustainable alternatives to fossil-based foam products
- Durable, lightweight materials for interior applications
- Alternative solutions to heavy particle boards in furniture
- Lightweight hybrid-panels for means of transportation
- Sound absorption or thermal insulation panels for construction
- Thermoformable biodegradable foam sheets for catering and packaging

### Our service

- Material development with different kinds of bioplastics like starch, PLA, other bio-polyesters, cellulose derivatives
- Comprehensive rheological analysis and control
- Tailored compounds for conventional processing lines
- Extrusion foaming, particle foams, or foam injection molding
- Physical and chemical foaming
- Use of a wide variety of environmentally friendly blowing agents
- Determination of gas solubility in polymers in a wide range of pressures and temperatures
- Analysis of foam characteristics: mechanics and morphology
- Sustainability assessment

### Your benefit

- Competitive advantages due to innovative materials
- Short development times
- Application oriented material and process development
- Accompanying your projects from first ideas to final products
- Quick and reliable material analysis and evaluation
- Scientific co-operation in research and development
- Advances in sustainability