

CAPROWAX P™

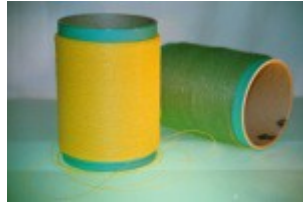
The biodegradable, thermoplastic material system is particularly suited for the cycle of matter for use in agriculture, horticulture, landscaping, nursery, viticulture, greenhouse, floristic, forestry, waste water treatment. Range of total organic carbon is 63-73 %, thereof are >80% biobased carbon from genetic engineering free plants. Primarily no content of foods and feeding stuff

Material system for following applications:

Bio-Masterbatches Monofilaments InjectionMoulding Thermoforming



Colouration



Textile Systems



NF-Bio-Composites



Blow moulding

CAPROWAX P™ 6006-00-000

Compostable material proofed according to DIN EN 13432, layer thickness 500µm, by MFPA, official material test establishment of Bauhaus- University Weimar (Germany)

Test material: CAPROWAX P® 6006-00-000

Test report: No. B31/188-05

Test certificate: No. P31/029-05

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Most recent amendment of CAPROWAX P™-Brochure: 19th November 2015

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Stable in use, thereafter degrades in compost

Products

Properties

Advantages

- Bio-Masterbatches for bioplastics/biocomposites
- Monofilaments and textile systems, plastic films
- Injection- and blow moulding, thermoforming sheet
- Compounds with custom-designed additives
- Bio-Dry-Blends for NF-Bio-Composites
- Hotmelt, binding agent, substrate
- Thermoplastic plasticine, modelling, joint sealer
- Plastisation of bioplastics
- Hydrophobising of water sensitive bioplastics
- Water proofed, tensile, stable in use
- No tendency to mildewing
- Tearproof and cold-flexible after stretching
- Processing without pre-drying: 80° - 150° C
- Free of aromatics and nitrogenous substances
- GM-Free, no content of starch or PLA
- Primarily no content of foods and feeding stuff
- **CAPROWAX P™ 6006** according to DIN EN 13432
- 80-90%* content of carbon from biobased resources
- Range of total carbon: 63-73%* *) calculated
- After composting pH-value 7 - 8
- Disposal of latent heat storage at 63-50 °C
- Environmentally friendly colourant

Products made of CAPROWAX P™

Quick degradation in compost works or slow rotting in soil into biomass, CO₂ and water. Under anoxic/denitrifying conditions degradation occurs completely as well. Just like lotus flowers product surfaces are self-cleaning with water or rain.

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The most important advantages of CAPROWAX P™

CAPROWAX P™ - materials are processible like plastics and contain nevertheless by the majority parts of renewable materials. The processing without predrying under moderate temperatures, low shear rates and pressures is especially suited for nature fabrics and heat-sensitive additives. The stability against water/mildewing and the balanced combination of stable in use, composting and rotting is exemplary.

No content of foods in raw material

Manufacturing of BioCAPROWAX P™ is feasible

CAPROWAX P™ - Compounds consist of mixtures from aliphatic polyester and modified herbal triglycerides. These triglycerides are mainly no foods and feeding stuff and are gained from oil plant for technical applications.

The applied aliphatic polyesters could be processed from biomass like renewable cellulose-/hemicellulose-material. By modification, the renewable platform chemical 5-Hydroxymethylfurfural makes it possible to get **BioCAPROWAX P™**

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Compostable material proofed by MFPA

CAPROWAX P™6006-00-000 is a compostable material according to DIN EN 13432 (layer thickness up to 500 µm)

Testmaterial: **CAPROWAX P®6006-00-000** proofed by MFPA, the official material test establishment of the Bauhaus-University Weimar.

Especially attention to the quality of raw material and products and rely on in all confidence with suppliers and customers. There is an abdication of registration and control as compostable material for reasons of cost.

The proof of compostability, according to DIN EN 13432, is documented by the official material test establishment MFPA of Bauhaus-University Weimar in Germany. Test certificate No. P 31/029-05. See on website pages

Bio-Masterbatches for colouration of Bioplastics

Bioplastics/biocomposites/blends: PLA, PCL, PBS, PHA, **CAPROWAX P™**, Bio-NFC, Bio-WPC, Polysaccharides/Derivate, Casein, PVOH, Bio-TPE, Bio-UPR, NIPU. Compostable carrier material **CAPROWAX P 6006-C65 (Intermediate)**, based on **CAPROWAX P™ 6006**, according to DIN EN 13432, see page 5-6

After a successful test with samples customers request will be coordinated with toll manufacturer. Making an offer for the customer about costs with regard to minimum order quantity. Further information see page 5-6.

Customer projects with basic material CAPROWAX P™

In a project with customers **CAPROWAX P™**-Compounds are produced in form of pellets, powder-mixtures with nature fibres and compounds with custom-designed additives.

To know material properties about you can order a lab sample a 300g / 1000g in fragmented or in powder form upon consultation

Information about products and projects:

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< COLOURATION >

Bio-Masterbatches with compostable carrier material **CAPROWAX P-6006-C65** (intermediate) on the basis of **CAPROWAX P™ 6006**, certified by MFPA, Weimar. Test material: **CAPROWAX P® 6006-00-000**. Test certificate: No. P31/029-05
Colouration of bioplastics: PLA, PCL, PBS, PHA, CAPROWAX P™, Bio-NFC, Bio-WPC, Polysaccharide/Derivate, Casein, Bio-TPE, Bio-UPR, NIPU, PVAL
 Customers request will be coordinated with toll manufacturer. Making an offer for the customer about costs with regard to minimum order quantity.

Full covering or translucent to transparent colouration: Injection moulding, vacuum moulding, blow moulding, hot melts, films, NF-Biocomposites, coating, thermoplastic plasticine.

The mineral pigments are light-fast, non-migratory, temperature stable, comparable to natural/mineral pigments and so already mineralised. They comply the specifications of DIN EN 13432. Pellets of masterbatches are added to bioplastics in a range of 0,5 to 4%. Processing temperatures up to 200°C. In the final products percentage of particular mineral components is $\leq 1\%$.

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Masterbatches samples for colouring tests

CAPROWAX P™	Shade of colour	CAPROWAX P™	Shade of colour
Red 112	S	Red 115	S
Red 114 T		Red 116	
Orange 205		Red Y 121 T	
Yellow 306	S	Orange 203	S
White 003	S	Orange 204	
Green 412		Yellow 307	
Green 413 T		Yellow 310 T	
Blue G 509		Green 418	
Blue G 512		Green 417	
Violet B 605		Green 416	S
Violet B 607	S	Blue G 511 T	
Violet B 606		Blue G 510	S
Brown 701		Violet R 608	
Grey 820	S	Violet R 610	S
		Violet R 609	
		Brown 702	S
		Black 801	S

T:translucent Y:yellowish tint G:greenish tint B:bluish tint R:reddish tint

Up to 4 test samples (free of charge) for your colouration test.

Masterbatches selected with „S” describe a focus list of mineral pigment types which are produced preferably. Please ask for offers with minimum order quantity.

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Practical tests

with products from CAPROWAX P™

Usability

While 1-2 periods of growing season properties are showing a notable fastness against water, moisture and mildewing. Just so appears a good flexibility under cold conditions. Following applications year round and over a longer time are possible now, e. g. plant pots in tree nursery, guard net, harvest devices and geotextiles for landscape protection. For use in greenhouse plant it would be especially advantageous to dispose bio-waste and CAPROWAX P™-products together. After harvest without additional work of separating strings, bound system, nets, pots and trays can biodegrade in composting facilities. In case of a direct and longer contact with soil rotting occurs in space of 1-2 years.

Herbal

Comparable growing tests with plant pots from CAPROWAX P™ and polypropylen don't show significant varieties. Development of roots, plants and flowers was comparable. CAPROWAX P™ doesn't contain aromatic and nitrogen. Only eco friendly colours and pigments are applied.

Composting under field-grown conditions

CAPROWAX P™- materials are homogeneous, biodegradable from aliphatic polyester and modified, herbal triglycerides. Tests with plant pots from CAPROWAX P™ 6002-00-000 (layer thickness of 500 µm) under comparable conditions of DIN V 54900-3 show after 12 weeks biodegradation of 94%.

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