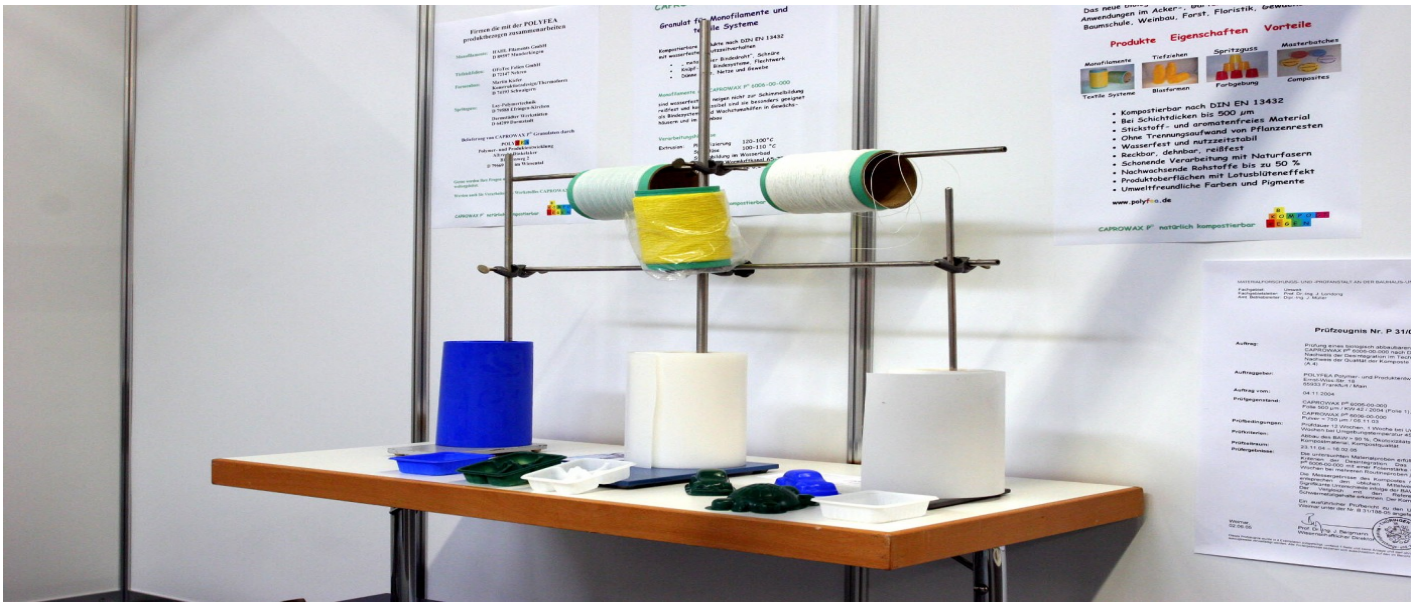
Blow moulding, vacuum forming with BioMineralComposites



BioMineralComposites with different content of natural Calcite

CAPROWAX P™ 6006-C65-BM42030
CAPROWAX P™ 6006-C65-BM42100

Description Compostable, waterproof binder CAPROWAX P™ 6006-C65	CAPROWAX P™ 6006-C65-BM42xxx contents 3-10% harmless, soil-similar, acid-binding, natural Biomineral Calcite. consists of aliphatic - biodegradable MARINE, home/industrial compostable - certified polyester and modified, readily biodegradable, renewable, GMO-free plant oil.
MFPA Weimar Test certificate: P31/029-05 see page 6 *) calculated	The binder material is comparable with the test material CAPROWAX P® 6006 DIN EN 13432 tested by MFPA Weimar 83,7% of organic carbon are biobased *)
No food or feeding stuff Ecofriendly composition	GM-free, no content of starch or PLA, no content of aromatic or nitrogeneous substances. Soil-similar biomineral.
Blow moulding Wall thickness 1-2 mm	Plastification without predrying 100-130°C, parison die 70-100°C, mould 15°C
Deep drawing, sheets, foils Orientation values Wall thickness 1-2 mm	Extrusion without predrying 160-130°C, melting calender <100°C or slot die <130°C, cool-/discharge roller 15°C Preheating sheets/foils 75-90°C , mould 15°C
Drying pellets on demand	50°C /12h Avoid heating melt >90°C over long time
Examples of application Suited for compostable and rotten products after use Masterbatches see pages 3-4	Products of injection moulding support material, substrate, frisbee disk, cans, plant plug signs, garden decor, soap dish, edge protection, trays, bark beetle trap, grave jewelry. Products comply the specifications of DIN EN 13432
Order quantities	0,3-2 kg sample free, 100 kg minimum order

CAPROWAX P™ compostable of course

BOW RAIN SOIL

Colouration with Masterbatches

CAPROWAX P-Masterbatches – without addition of TiO2 - for Bioplastics/ Biocomposites/Blends/Filaments as: PLA, PBS, PHA, PCL, CAPROWAX P™/Blends, BioMineralComposites, Bio-NFC, Bio-WPC, Polysaccharides/Derivates, Casein, PVAc/Bioplastic-Blends, PVOH, Bio-TPE, Bio-UPR, NIPU. Carrier material based on CAPROWAX P™ 6006 is compostable, waterproof and according to DIN EN 13432. Customers request will be coordinated with toll manufacturer.

Translucent and covering colouration:

Pigments are biobased, bio-mineral, mineral, harmless inororganic from synthetic production. Moderate brightening with calcined Kaolin without addition of TiO2. They are harmless, lightfast, non-migratory, water insoluble, temperature stable, soil improving and comparable with natural pigments.
They are low-dusty incorporated in compostable carrier material and already mineralized. Masterbatches added to different bioplastics in a range of 0,5-4% can be processed at 90-200°C, short time up to 220°C.
In coloured final products the content of each separate pigment is ≤1% colouration of bioplastics comply the specifications of DIN EN 13432.

Masterbatches for translucent colouration

CAPROWAX P™	Shade chromatic	CAPROWAX P™	Shade chromatic
Red 114 T		Red Y 121 T tex	AR
Yellow 310 T tex	AR	Green 427 T tex	
Green 413 T tex	MB500	Green 426 T tex	
Green AR 430 T tex	LP/AR	Blue AR 530 T tex	LP/AR
Blue G 511 T tex		Blue R 516 T tex	
Violet B 616 T		Violet R 617 T	

R: reddish Y: yellowish G: greenish B: bluish T: translucently
tex: suited for colouration of filaments LP: Laboratory prototype AR: acid resistant
MB500 = 500g sample for process engineering experiments

The compostability of carrier material is examined by MFPA, University Weimar:
Test material: CAPROWAX P® 6006
Test certificate No.: P31029-05 according to DIN EN 13432 see page 6

Thermoplastic application for translucent to transparent, full covering and effecting colouration: Processing at 90-200°C, short time up 220°C.

Pearlescent Masterbatches mpc *LP without addition of Titanium Dioxide

Pearl Gold light 9307		Pearlescent neutral 9002	u
Pearl Gold medium 9317	#	Pearl White 9011	u
Pearl Gold dark 9314		Pearl Silver classic V 9012	#
Pearl Red 9101		Pearl Silver silky V 9016	#
Pearl Bronze 9701		Pearl Silver grey V 9014	#

# = also for opaque or filled BioPolymers / u = matt pearlescent for all colours
V = vegetable carbon, biobased/LP = Laboratory prototype /mpc = matt pearlescent

Pigment mixtures are low-dusty incorporated in compostable carrier material and masterbatch pellets are added to different bioplastics: 2-4%.

Colourations of bioplastics comply the specifications of DIN EN 13432.

Your order of CAPROWAX P™ – Products see page 5

Masterbatches for covering colouration

CAPROWAX P™		Shades	CAPROWAX P™		Shades
Red FK 133 tex		AR	Red FK 112		LP
Lava-Red 134	QX	LP	Red FK 117		LP/AR
Orange FK 204		LP/AR	Orange FK 203		LP/AR
Orange 206 BM	QX	LP/AR	Orange FK 205		LP/AR
Yellow FK 320		LP/AR	Yellow FK 306		LP/AR
Yellow 314 BM	QX	LP/AR	Yellow FK 312		LP/AR
White C 004 BM	QX	MB500	White FK 005 tex		MB500/AR
Grün 416 tex			Grün 417 tex		
Grün FK 446 tex		LP	Grün FK 440 tex		LP
Grün 444 BM	QX	MB500	Grün FK 443 tex		LP
Blue FK G 510 tex		LP	Blue G 545 BM	QX	LP
Blue FK G 512		MB 500	Blue FK G 509		LP
Violet FK B 605		LP/AR	Blue FK R 542		LP
Violet B 636 BM	QX	AR	Violet FK R 608		LP/AR
Brown V 713 BM	QX	LP	Violet R 637 BM	QX	AR
Brown FK V 709	QX	LP	Brown V 724 BM	QX	LP/AR
Lava-Brown 717	QX	LP/AR	Brown FK V 711	QX	LP
Grey 821 BM	QX		Lava-Brown 715	QX	LP/AR
Lava-Grey FK 833	QX	LP	Grey FK 824 S wcb tex		LP/AR
Black 801 wcb		AR	Black V 804	QX	AR
Black V 8121	QX	LP/AR	Lava-Black 806	QX	LP
BioMineralComposite direct compound BM42030			Black V 8117	QX	AR

AR = acid-stable S: heat stable up to 220°C wcb = without carbon black LP: Laboratory Prototype
R: reddish G: greenish B: bluish MB500 = for process engineering experiments

Products QX for soil improvement and fertility:

QX = Soil improvement, water retention capacity, fertility
V = Biobased: Vegetable carbon from coconut shells/Activated carbon from wood
BM = BioMineral, natural Calcite, acid-binding
Lava = Lava rock flour from the volcanic eifel
FK = Moderate brightening with the eco-friendly, pigmentlike, Kaolin (calcined)
Addition of CAPROWAX P - Masterbatches to different bioplastics: 0,5-4/6%.

CO2 long-term fixation by vegetable carbon/lava rock flour

CAPROWAX P™ compostable of course

BOW RAIN SOIL

Your order of CAPROWAX P™ - Products

Deep drawing, blow moulding:	CAPROWAX P™ 6006-C65-BM42030 CAPROWAX P™ 6006-C65-BM42100
Test material:	0,3-2 kg,
Toll manufacturing:	100 kg minimum order
Miscellaneous:	Product information and SDS

Masterbatches: CAPROWAX P™ + shade + code, colour palette pages 3-4

Technical samples: You can get up to 4 samples a 50g pellets free of charge
For additional process engineering experiments
you can get 500g MB500 samples see page 3-4

New MB-Recipes: CAPROWAX P™- Button of Laboratory prototypes (LP)

Market area:	European Union
Order quantities +/- 25 kg	100 kg, 200 kg, 500 kg / batchwise manufactured by toll manufacturer
Prices:	According to offer
Payment condition:	According to offer
Delivery date:	after complete delivery of raw materials to toll manufacturer: 6 – 7 weeks
Miscellaneous:	Product infos and SDS

Informations, quote requests and orders at

Albrecht Dinkelaker,
Polymer and Product Development
Talstrasse 83 info@polyfea2.de
D 60437 Frankfurt am Main Fon: ++49 69 76 89 39 10

Banking details/Finance office: On request VAT-No.: DE165 604 009

MATERIALFORSCHUNGS- UND -PRÜFANSTALT AN DER BAUHAUS-UNIVERSITÄT WEIMAR

Department: Department of Environment
Head of Department: Prof. Dr.-Ing. J. Londong
Department Manager: Dipl.-Ing. J. Müller

AMTLICHE PRÜFSTELLE
Akkreditiertes Prüflaboratorium

MFPA Weimar
Amalienstraße 13
99423 Weimar
Germany
Phone. 03643 / 564 353
Fax. 03643 / 564 201

Test certificate No. P 31/029-05

Order: Test of a biodegradable polymer / wax-compound CAPROWAX P ® 6006-00-000 to German Institute for Standardization DIN EN 13432 with the proof of the disintegration in a bench-scale test (A.3), proof of the quality of the composts (8.), including the ecotoxicological harmless state (A.4)

Customer: POLYFEA Polymer- und Produktentwicklung Albrecht Dinkelaker
Ernst-Wiss-Str. 18
65933 Frankfurt / Main

Order date: 04.11.2004

Test object: CAPROWAX P® 6006-00-000
foil 500 µm / KW 42 / 2004 (foil 1), MFPA-No. BAW 4869

CAPROWAX P® 6006-00-000
powder < 750 µm / 06.11.03 MFPA-No. BAW 4869

Test condition: Test duration 12 weeks, 1 week at temperature of approximately 65 °C, 11 weeks at temperature of approximately 45 °C

Test criterion: Degradation of the BAW > 90%, ecotoxicological harmless state compared to compost material, compost quality

Test period: 23.11.04 – 16.02.05

Test results: The examined material samples fulfil the criteria of the disintegration for the aerobic process of composting. The examined material CAPROWAX P ® 6006-00-000 with a foil strength of 500 µm was degraded with several routine tests in each case to more than 90% within 12 weeks.

After ending of the test period the measuring results of the compost corresponded to the usual averages of the RAL quality tests. Significant differences as a result of BAW addition were not found. The comparison with the authoritative control samples revealed no higher heavy metal content. At the end the compost was rotted sufficiently.

A detailed test report to the investigations was given at MFPA Weimar (No. B 31/188-05).

Weimar,
2005-06-02

Prof. Dr.-Ing. J. Bergmann
Scientific Director

THÜRINGEN 38 Materialforschungs- und -prüfanstalt Weimar

Dipl.-Ing. J. Müller
Project Manager