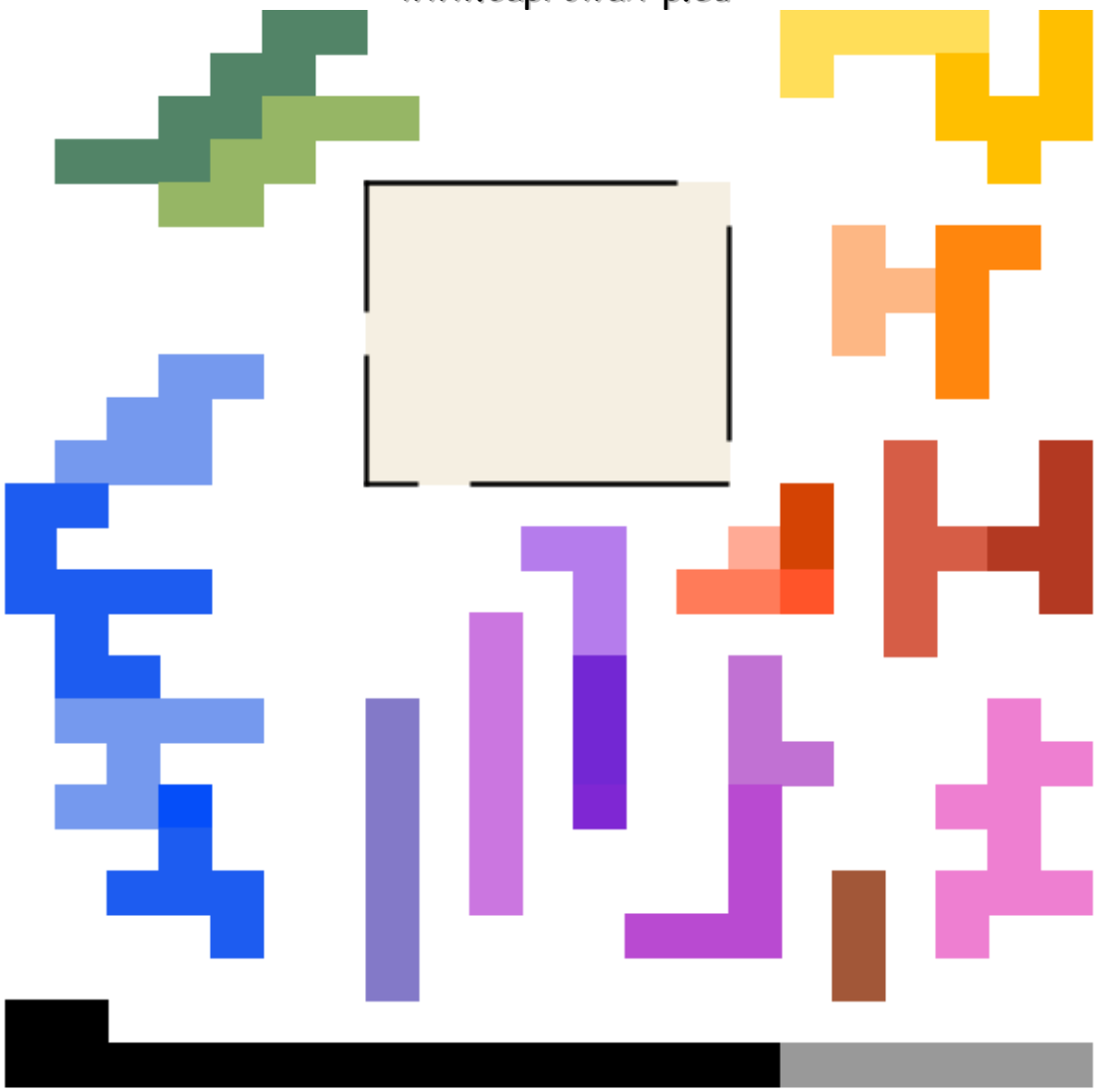
CAPROWAX P™ Biomineral Mineral Composite

Coloured, thermoplastic, waterproof, compostable direct compounds for biodegradable, environment-friendly, soil-improving applications excluding the food sector: Extrusion/injection moulding/deep-drawing/pressing and moulded parts, seals, decor, stamp embossing, roller printing, 3D printing, natural fibre coating, surfaces/foils type FKL for intake fats/oils, hot melt adhesives, carrier material bioactive components They consist of a compostable binder and the bio-mineral natural calcite.
The colorants are made from bio-based plant/activated carbon and colourful, harmless mineral pigments that are graded with calcined kaolin - without the addition of TiO2. Modified with mica to create matt pearlescent colourations.
The binder is waterproof, consists of aliphatic – MARINE biodegradable, home/industrially compostable (see page 5) - certified polyesters and modified, easily biodegradable, renewable, GMO-free vegetable oil, no food or feeding stuff.
Coloured BioMineral Mineral Composites comply the requirements of DIN EN 13432

www.caprowax-p.eu



CAPROWAX P™ compostable of course BOW RAIN SOIL

CAPROWAX P™ BioMineral Mineral Composite

Compounds contain ≤1% coloured, mineralic pigments according to DIN EN 13432

CAPROWAX P™	Chromatic Shade	Description Direct compound (DC) page 2
MM65030 Red FK 1150	LP	Direct compound Kaolin, Ultramarine Red/Pink
MM65030 Red FKL 1177	LP	DC Kaolin, Ultramarine Red/Pink, Kaolin-FKL, tx
BM42030 Red FK 1144	LP	Direct compound Calcite, Iron Oxide Red nm/Kaolin
BM42030 Red FK 1145	LP	Direct compound Calcite, Iron Oxide Red nm/Kaolin
BM42030 Red FK 1147		Direct compound Calcite, Iron Oxide Red nm/Kaolin
BM42030 Red FKL 1166	LP	DC Calcite, Iron Oxide nm/Kaolin, Kaolin-FKL, tx
BM42030 Pearl Red 9105 mpc	LP	DC Calcite, Mica/Iron Oxide Red nm, natural Mica
BM42030 Orange FK 2211	LP	Direct ompound Calcite, Iron oxide Red nm/Kaolin
BM42030 Orange FK 2210	LP	Direct compound Calcite, Iron Oxide Red nm/Kaolin
BM42030 Orange FK 2212	LP	Direct compound Calcite, Iron Oxide Red nm/Kaolin
BM42030 Orange FKL 2222		DC Calcite, Iron oxide Red nm/Kaolin, Kaolin-FKL, tx
BM42030 Yellow FK 3365	LP	DC Calcite, Iron Oxide Yellow nm/Kaolin
BM42030 Yellow FK 3364	LP	DC Calcite, Iron Oxide Yellow nm/Kaolin
BM42030 Yellow FK 3366	LP	DC Calcite, Iron Oxide Yellow nm/Kaolin
BM42030 Yellow FKL 3333	LP	DC Calcite, Iron oxide Yellow, Kaolin FKL, tx
BM42030 Pearl Gold 9320	LP	DC Calcite, natural Mica, Iron oxide Yellow, Calcite, mpc
BM42030 Pearl Silver V 9024	LP	DC Calcite, natural Mica, Pflanzenkohle, Calcite, mpc
BM42030 Pearl Silver FK V 9028	LP	DC Calcite, natural Mica, Pflanzenkohle, Kaolin, mpc
BM42030 Pearl White 9004	LP	Direct compound Calcite, natural Mica, mpc
BM42030 White		Basic material BioMineralComposite Calcite
BM42030 White FKL 0055	LP	Direct compound Calcite, Kaolin, Kaolin-FKL, tx
MM65030 White FK	LP	Basic material MineralComposite Kaolin calcined, FK

LP: Laboratory Prototype mpc = matt pearlescent V = biobased nm = not magnetic

BM = BioMineralComposite Calcite, acid binding / MM = MineralComposite Kaolin / FK = Kaolin calcined

FKL = lipophilic intake of fats and oils by Kaolin-Blotter-Effect / tx = thixotropic

For your visual assessment of laboratory samples you will receive up to 4 coloured examples - selected by you - in the form of buttons and model films. A colour selection should be made in daylight. Similar to the lotus flower effect, the plant wax can form a matt coating that can be wiped off with a soft cloth and polished.

Scale-up and order quantities see page 6

CAPROWAX P™ compostable of course RAIN BOW SOIL

CAPROWAX P™	Chromatic Shade	Description Direct compound (DC) page 3
BM42030 Green AR Y 4499	LP	Direct compound Calcite, pigment mix Green, nm
BM42030 Green AR M 4485	LP	Direct compound Calcite, pigment mix Green, nm
BM42030 Green AR B 4486	LP	Direct compound Calcite, pigment mix Green, nm
BM42030 Green AR FKL 4488	LP	DC Calcite, pigment mix Green, nm, Kaolin-FKL, tx
BM42030 Pearl Green AR 9408	LP	DC Calcite, natural Mica, pigment mix Green, nm, mpc
BM42030 Blue AR G 5722	LP	Direct compound Calcite, Pigment mix Blue AR, nm
BM42030 Blue AR 5560		Direct compound Calcite, Ultramarine Blue AR
BM42030 Blue AR 5561	LP	Direct compound Calcite, Ultramarine Blue AR
BM42030 Blue AR FK 5562	LP	DC Calcite, Ultramarine Blue AR/Kaolin
BM42030 Blue AR FK 5563		DC Calcite, Ultramarine Blue AR/Kaolin
BM42030 Blue AR FKL 5566	LP	DC Calcite, Ultramarine Blue AR, Kaolin-FKL, tx
BM42030 Pearl Blue AR 9505	LP	DC Calcite, natural Mica, Ultramarine Blue AR, mpc
MM65030 Violet FK B 6668	LP	Direct compound Kaolin, Ultramarine Violet B
MM65030 Violet FK R 6669	LP	Direct compound Kaolin, Ultramarine Violet R
MM65030 Violet FK B 6660		Direct compound Kaolin, Manganese Violet B, m
MM65030 Violet FK B 6661	LP	Direct compound Kaolin, Manganese Violet B, m
MM65030 Violet FK B 6662	LP	DC Kaolin, Manganese Violet B/Kaolin, m
MM65030 Violet FK B 6663	LP	DC Kaolin, Manganese Violet B/Kaolin, m
MM65030 Violet FKL B 6666	LP	DC Kaolin, Manganese Violet B, Kaolin-FKL, m, tx
MM65030 Pearl Violet FKB 9606	LP	DC Kaolin, Naturalmica, mpc, ManganeseViolet B, m
MM65030 Violet FK R 6670	LP	Direct compound Kaolin, Manganese Violet R, m
MM65030 Violet FK R 6671	LP	Direct compound Kaolin, Manganese Violet R, m
MM65030 Violet FK R 6672	LP	DC Kaolin, Manganese Violet R/Kaolin, m
MM65030 Violet FK R 6673	LP	DC Kaolin, Manganese Violet R/Kaolin, m
BM42030 Brown V 7730 nm	LP	DC Calcite, Iron Oxide nm, vegetable Carbon, QX
BM42030 Pearl Bronze 9703	LP	DC Calcite, Mica/Iron oxide nm, natural Mica, mpg
BM42030 Grey V 8835	LP	Direct compound Calcite, vegetable Carbon, QX
BM42030 Black V 8113		Direct compound Calcite, vegetable Carbon, QX
BM42030 Black V 8117		DC Calcite, Activated Carbon biobased
BM42030 Lava-Black V 8125	LP	DC Calcite, V-Carbon, Lava-Gesteinsmehl, m, QX

Tint: R: red Y: yellow M: medium B: blue G: green mpc = matt pearlescent nm = not magnetic
LP: Laboratory prototype AR = acid/alkali stabilised FK = Kaolin, calcined m = magnetic
BM = BioMineralComposite Calcite, acid binding MM = MineralComposite Kaolin V = biobased
FKL = lipophilic intake of fats and oils / kaolin blotter effect tx = thixotropic

QX = Soil improvement, water retention capacity, fertility
O2 long-term fixation by vegetable carbon / lava rock flour from the Vulcan Eifel

CAPROWAX P™ compostable of course

BOW RAIN SOIL

Applications with CAPROWAX P™ Materials

Thermoplastic, easily demouldable processing 90-200°C, short 220°C , mould 15°C

Injection moulding

Masterbatches

with compostable carrier material

Thermoforming Foils / Sheets

Buttons

Blow moulding

CAPROWAX P™ compostable of course

BIORAIN

CAPROWAX P™ compostable of course BOW RAIN SOIL

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

Order of CAPROWAX P™-Direct Compounds

CAPROWAX P™ direct compound granules are produced in batches by the contract manufacturer.

COLOUR-PALETTE for biopolymeric applications

For your visual assessment you will receive up to 4 examples in form of buttons and model films. A colour selection should be made in daylight. Similar to the lotus flower effect, the plant wax can form a matt coating that can be wiped off with a soft cloth and polished.

DELIVRY QUANTITIES:	After your selection you will receive an offer for scale-up production quantities of 25 (+/- 2,5) kg, as well as a site-related direct delivery of 100kg, 200kg, 500kg in PE bags on pallets To improve the procurement of raw materials an annual demand report is helpful.
MARKETING AREA:	European Union
PRICES:	Product prices according to offer
TERMS OF PAYMENT:	Invoicing according to offer
DELIVERY TIMES:	After complete delivery of the raw material to the contract manufacturer plus up to 6-7 weeks
MISCELLANEOUS:	Product infos and safety data sheets

Information, Products- and Projects:

Albrecht Dinkelaker

Polymer- and Produkt Developement

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D 60437 Frankfurt am Main

info(at)polyfea2.de
Fon: 0049 69 76 89 39 10

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

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