CAPROWAX P™ BioMineralComposite direct compounds

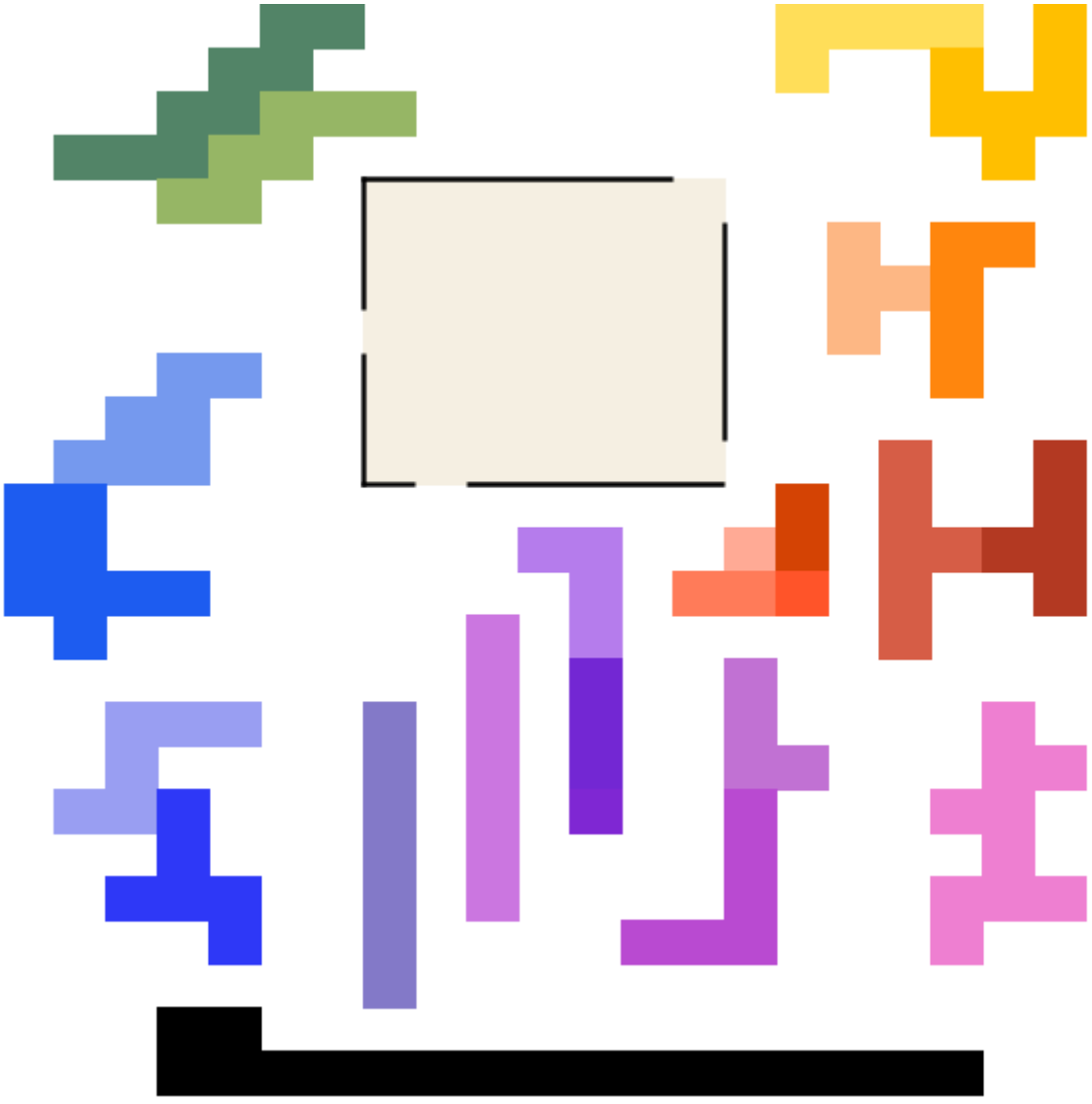
Coloured, thermoplastic, waterproof, compostable materials for biodegradable, environment-friendly, soil-improving applications excluding the food sector: Extrusion/injection moulding/thermoforming/compression and moulded parts, stamping, roller printing, seals, 3D printing, natural fiber coating, films, hot-melt adhesives, cups, growing and soap dishes, vases, tins, signs.

The direct compounds consist of compostable binder and natural calcite

Harmless colourants made from bio-based plant/activated carbon, ultramarine, non-magnetic iron oxides, manganese violet, mica, kaolin without addition of TiO2

The binder is waterproof, consists of aliphatic - biodegradable MARINE, home/industrially compostable - certified polyesters and modified, easily biodegradable, renewable, GMO-free vegetable oil (see page 5).

The coloured BioMineralComposites comply the requirements of DIN EN 13432



CAPROWAX P™ BioMineralComposite direct compounds

Compounds contain ≤1% coloured, inorganic pigments according to DIN EN 13432
Thermoplastic processing in the range of 90-200°C, briefly up to 220°C
The colour shades are comparable or similar to the real product colours.

CAPROWAX P™	Chromatic Shade	Description Direct compound (DC)
BM42030 Red 1142	LP	Direct compound Calcite, Ultramarine Red
BM42030 Pearl Red 9106 mpc	LP	DC Calcite, Mica with Ferric oxide nm, natural Mica
BM42030 Pearl Red 9105 mpc	LP	DC Calcite, Mica with Ferric oxide nm, natural Mica
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	LP	Direct compound Calcite, Iron oxide Red nm, Kaolin
BM42030 Red FK 1146	LP	Direct compound Calcite, Iron oxide Red nm, Kaolin
BM42030 Orange FK 2211	LP	Direct compound 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 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 Pearl Gold FK 9318 LP		DC Calcite, Iron oxide Yellow nm, natural Mica, Kaolin, mpc
BM42030 Pearl Silver V 9020 LP		DC Calcite, natural Mica, Vegetable Carbon, mpc
BM42030 Pearl White 9004 mpc	LP	DC Calcite, natural Mica
BM42030 White		Basic material BioMineralComposite Calcite

LP: Laboratory prototype R: reddish G: greenish B: bluish mpc = matt pearlescent V = biobased
BM = BioMineralComposite Calcite, acid bindung FK = Kaolin calcined nm = not magnetic

For your first visual assessment you will receive up to 4 examples in form of buttons For further tests: Scale-up and order quantities on request

continuation see page 3 »»»

CAPROWAX P™ BioMineralComposite direct compounds

CAPROWAX P™	Chromatic Shade	Description Direct compound (DC)
BM42010 Green FK 4451 nm	LP	Direct compound Calcite, Pigmentmix Green
BM42010 Green FK 4454 nm	LP	Direkt compound Calcite, Pigmentmix Green, Kaolin
BM42010 Green FK 4453 nm	LP	Direct compound Calcite, Pigmentmix Green, Kaolin
BM42030 Blue G 5548	LP	Direct compound Calcite, Ultramarine Blue
BM42030 Blue FK G 5550	LP	Direct compound Calcite, Ultramarine Blue, Kaolin
BM42030 Blue FK G 5551	LP	Direct compound Calcite, Ultramarine Blue, Kaolin
BM42030 Blue R 5549	LP	Direct compound Calcite, Ultramarine Blue
BM42030 Blue FK R 5552	LP	Direct compound Calcite, Ultramarine Blue, Kaolin
BM42030 Blue FK R 5553	LP	Direct compound Calcite, Ultramarine Blue, Kaolin
BM42030 Violet B 6642	LP	Direct compound Calcite, Ultramarine Violet
BM42030 Violet R 6640	LP	Direct compound Calcite, Ultramarine Violet
BM42030 Violet B 6648	LP	Direct compound Calcite, Manganese Violet
BM42030 Violet FK B 6647	LP	Direct compound Calcite, Manganese Violet, Kaolin
BM42030 Violet FK B 6645	LP	Direct compound Calcite, Manganese Violet, Kaolin
BM42030 Violet R 6641	LP	Direct compound Calcite, Manganese Violet
BM42030 Violet FK R 6649	LP	Direct compound Calcite, Manganese Violet, Kaolin
BM42030 Violet FK R 6650	LP	Direct compound Calcite, Manganese Violet, Kaolin
BM42030 Brown V 7730	LP	DC Calcite, Iron oxides, Vegetable Carbon
BM42030 Pearl Bronze 9702 LP		DC Calcite, Mica with Ferric oxide nm, natural Mica,mpc
BM42030 Grey V 8834	LP	Direct compound Calcite, Vegetable Carbon
BM42030 Black V 8117		DC Calcite, Aktivated Carbon biobased

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BM = BioMineralComposite Calcite, acid bindung FK = Kaolin calcined nm = not magnetic V = biobased

www.caprowax-p.eu

Applications with CAPROWAX P™ Materials

Injection moulding

Masterbatches

with compostable carrier material

Thermoforming
Foils / Sheets

Buttons

Blow moulding

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