

THE GLOBAL COLORS NEWSLETTER



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POINTS OF INTEREST:

- **Plastika Kritis launches masterbatches with biodegradable carrier (Ecoflex®).**
- **New high performance color masterbatches for multilayer food packaging are approved.**
- **The Plastika Kritis black masterbatches portfolio is enriched with new products.**
- **REACH compliant PVC masterbatches are now available.**

NEW BLACK MASTERBATCH BASED IN ECOFLEX®

Ecoflex® is the leading synthetic fully biodegradable plastic material, according to its manufacturer BASF. This aliphatic-aromatic copolyester is proposed for use in bags, paper coating, disposable packaging or agricultural films. It decomposes without leaving harmful residues

It is fully certified as biodegradable and compostable in compost within about 180 days maximum in the U.S. (American Certification System of Biodegradable Products Institute, ASTM D6400), Europe (European Standard EN 13432) and Japan (GreenPla Standard).

Plastika Kritis has produced Black BIO4407P, which is a masterbatch containing 40% of a premium P type carbon black

in an Ecoflex® carrier. This masterbatch was produced with an excellent dispersion of carbon black in the polymer matrix, suitable even for very thin films. Black BIO 4407P is designed to look, feel and perform like low density polyethylene based masterbatches and can be used in formulations combining biobased material like cellulose, starch, polylactic acid (PLA), polyhydroxy alcanoates (PHA), biodegradable synthetic polymers (e.g. polycaprolactone (PCL), polybutylene succinate (PBS) or on its own in the flexible films sector or in injection moulding.

It can be used for compostable plastic bags, films and thick sections. A particularly interesting application for this masterbatch is the use in mulch films (15-25mic of thickness)

at an addition rate of 8%-10%. Black BIO4407P is already approved and used by a major French manufacturer of agricultural films.

It is shipped as egg-shaped pellets packed in Al laminated bags.



Picture 1: Kritilen Black BIO4407P could be a good solution for the coloration of mulch film.

ALTERNATIVE WHITE MASTERBATCHES PRODUCT LINES

As the TiO₂ shortage continues, Plastika Kritis has developed two new product lines of white masterbatches, which aim to increase the availability of such masterbatches for certain applications.

These products are:

1. Series "A": These masterbatches contain anatase TiO₂. Anatase grades have a different crystalline

structure in comparison with the rutile type, Plastika Kritis were using up to now. Anatase grade have a slightly lower opacity, mainly observed in thin films, and therefore they must be used at a 10%-15% increased addition rate, in comparison with rutile types, in order to achieve the same opacity.

2. Series "E": These masterbatches contain cost efficient types of

TiO₂. They are mainly proposed for end applications in which the dispersion, opacity and weather fastness requirement are not so strict. The price of these products is lower in comparison with the standard white masterbatches.

"A" and "E" products are not recommended in end applications, in which high light and weather fastness are required.

PVC COMPOUND COMPLIANT WITH REACH REQUIREMENTS

Plastika Kritis used a PVC compound as carrier for the production of PVC masterbatches. This compound contained DEHP, which acted as a plasticizer in the compound formulation.

Recently, DEHP (CAS number 117-81-7), together with BBP (CAS number 85-68-7), DBP (CAS number 84-74-2) and diisobutyl phthalate (CAS number 84-69-5), was declared as candidate for inclusion in the List of Sub-

stances of Very High Concern (SVHC), according to REACH.

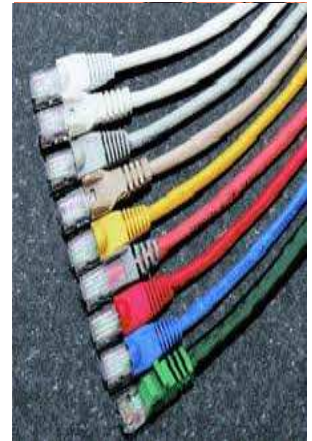
This has initiated requests from various customers asking for DEHP-free masterbatches.

Plastika Kritis has collaborated with its suppliers of PVC compound, in order to find alternative compounds without having any of the above mentioned plasticizers. On the other hand, the new compound must have the

same rheological properties as the standard one and a reasonable price.

Finally, diisononyl phthalate (DINP) with CAS number 28553-12-0 was selected to be the plasticizer in the new compound. This is not included in the List of SVHC and has shown a similar performance as DEHP.

Plastika Kritis can now offer PVC masterbatches free of DEHP or other SVHC plasticizers.



Picture 2:
PVC cables can be colored with the Plastika Kritis REACH compliant PVC masterbatches.

COLOR MASTERBATCHES APPROVED FOR POLYAMIDE FOOD PACKAGING

Plastika Kritis is one of the main suppliers of an important producer of plastic films, used either for packaging or for greenhouses.

One of the key products of this customer is a very thin 5-layer barrier tube used for the packaging of processed meat (for example ham or salami).

The tube has barrier properties, in order to protect its content. It has the following

multi-layer structure:

Layer 1: Polyamide

Layer 2: Tie

Layer 3: Polyethylene + 20% color masterbatch

Layer 4: Tie

Layer 5: Polyamide

Plastika Kritis has developed a certain number of color masterbatches for this application. The designer's goal for such a project was to

create masterbatches with excellent dispersion, suitable for thin films, and high heat resistance (at least 280C), due to the presence of polyamide in films structure. High performance pigments were used and polyethylene based masterbatch samples were sent to the customer for tests. The feedback was positive and the customer finally approved Kritilen Yellow 11388, Orange 21776 and Brown 71772.

"The designer's goal for such a project was to create masterbatches with excellent dispersion, suitable for thin films, and high heat resistance (at least 280C), due to the presence of polyamide in films structure."

ENDOTHERMIC BLOWING AGENT FOR BABY SEATS

Romcolor 2000 has developed, produced and tested a new blowing agent masterbatch, Rombest BA42, in industrial applications. More specifically, BA42 is tested and approved in the production of polypropylene injection

moulded parts for Isofix baby seats used in cars.

BA42 is also expected to be assessed in application such as PP thermoforming and PE/PP foamed insulation pipes, during the next weeks.

Compared to other blowing agent masterbatches existing in Romcolor's portfolio, such as Rombest BA41, the new BA42 has the same loading of active ingredient (40%) but is having a significantly lower cost.



Picture 3:
Isofix baby seats can now be produced with Romcolor's BA42 blowing agent.

COST EFFICIENT AND LOW PLATE-OUT FLUORESCENT MASTERBATCHES

Plastika Kritis is on a continuous search for finding alternative solutions enabling the customer to get a cost advantage.

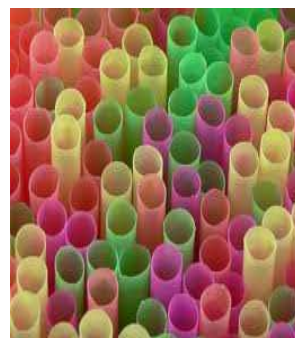
Additionally to the standard portfolio of Kritilen fluorescent masterbatches, Plastika Kritis offers a variety of options to customers who have specialized needs.

To be more specific, those who require cost efficient but good quality fluorescent

masterbatches, e.g. producers of polypropylene straws, Plastika Kritis offers a series of low price fluorescent masterbatches containing formaldehyde-free pigments. The quality and suitability of these products has been tested in various end applications with very good results. The names of these masterbatches are Yellow 11578, Orange 21972, Red 31343, Magenta 31493 and Green 51261.

Furthermore, Plastika Kritis offers a range of low plate-out fluorescent masterbatches.

These new products also provide brilliant, strongly saturated shades of yellow, red and magenta colours exhibit improved heat stability, especially at lower pigment loading, high reflection in daylight and under UV light and also high compatibility with polyethylene and polypropylene.



Picture 4: Plastika Kritis offers a variety of solutions for the coloration of fluorescent straws

FOOD APPROVED AND LOW COST BLACK MASTERBATCHES

After conducting a market survey in Greece, it was found that a need for a low cost and food approved black masterbatch has emerged.

Plastika Kritis, in order to respond to this need, has developed Kritilen Black 426P. This masterbatch contains a selected P type carbon black grade and calcium carbonate in a LLDPE carrier. Its tinting strength is similar to the one that

Kritilen Black 340 has.

Black 426P is the cheapest food approved masterbatch in the Plastika Kritis portfolio and complies with all the relevant food contact norms and European Union Directives such as AP89, 2002/72, 2007/19 and the latest 10/2011.

Black 426P can be potentially proposed for use in black straws for refreshments, food containers, etc.

Additionally, for polystyrene end applications, Plastika Kritis now offers Black PS7251P. It contains the same carbon black pigment, as Black 426P, therefore it is compliant with the above mentioned food contact directives.

Its low price makes it a unique solution for applications, in which a low cost solution is required, without jeopardising the safety of the packaging media content.

“Black 426P is the cheapest food approved masterbatch in the Plastika Kritis portfolio and complies with all the relevant food contact norms”

BROWN MG PVC71775 IS APPROVED IN PVC PROFILES MANUFACTURING

During the production of PVC profiles, the manufacturer blends, at the first production stage, rigid PVC, calcium carbonate, additives and pigments, which are all in powder form. Then, this blend is extruded for the production of the profiles.

Any attempt to use standard masterbatches, instead of pigments, fails, as the significant different size of the

masterbatch pellets, in comparison to powder particles, results in a non-homogeneous blend.

Plastika Kritis has developed a new product, Brown MG PVC71775, for an international manufacturer of PVC profiles. PMG VC71775 is produced in micropellets (strand diameter <0.8mm and strand length <1.2mm), so that it can be properly blended with pow-

der raw materials, without causing any problem in blending.

This masterbatch was produced in an special masterbatch production line, properly configured for producing micropellets.

Plastika Kritis and Romcolor, as well, are able to design and produce a variety of such products having different shades and being pelletised in micropellets.



Picture 5: Micropellet masterbatches are used for the coloration of PVC profiles.

A NEW FIBER GRADE BLACK MASTERBATCH APPROVED BY EGYPTIAN MANUFACTURER OF CARPETS

Plastika Kritis is in close collaboration with one of the most recognized brands in the machine woven rug and carpet industry in Egypt. This manufacturer was established in 1980 and now is an important consumer of color and black fiber grade masterbatches based mainly on a polypropylene carrier.

Plastika Kritis has proposed this customer Kritilen Black PPF9421P, which is having 40% of a P type carbon black and a PP-homo as a carrier. The excellent dispersion of the carbon black in the masterbatch carrier and the carefully designed rheology of this product makes it an ideal solution for the color-

ation of black yarns. In addition, the selection of a premium grade carbon black assures product quality consistency.

The test sample was approved by the customer, after several tests in a variety of products, and now the customer has started to place orders on a regular basis.



Picture 6: Kritilen Black PPF9421P is a proven solution for the coloration of black polypropylene yarns.

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