K R I T I L E N® MASTERBATCHES FOR PET BOTTLES

TECHNICAL INFORMATION

KRITILEN® masterbatches for PET bottles are concentrates of colorants or additives in a polymer carrier. They offer a convenient way of incorporating colorants or specialty additives in PET bottles, without contamination by dust and with good dispersion which is essential for maximum coloring strength and performance.

PRODUCTS AND APPLICATIONS

The basic product line consists of the following color masterbatches:

a) *KRITILEN YELLOW PET11325 AND PET11765*: Opaque yellow shades for bottles.

b) *KRITILEN YELLOW PET11326*: Transparent yellow shade for containers or bottles.

c) *KRITILEN ORANGE PET21749*: Strong orange shade for PET containers

d) *KRITILEN ORANGE PET21768*: Opaque orange shade for PET containers

e) *KRITILEN RED PET31393*: Lively red shade for containers of any size

f) *KRITILEN RED PET31339*: Transparent and brilliant red shade for bottles

g) *KRITILEN GREEN PET51980*: Transparent green shade for refreshment bottles

h) *KRITILEN GREEN PET51516*: Transparent green shade for olive oil bottles

i) *KRITILEN BLUE PET41305*: Transparent blue shade for still water bottle

j) *KRITILEN BLUE PET41180*: Transparent blue shade for carbonated water bottle

k) *KRITILEN BLUE PET41122*: Transparent blue shade for spirit bottles

All above masterbatches contain raw materials, which according to their suppliers, comply with food approval regulations. Based on the customer specific color requirements, the PLASTIKA KRITIS colormatching department can develop alternative color masterbatches for PET bottles.

Additionally, the basic product line includes the following food approved white and black masterbatches:

l) *KRITILEN WHITE PP958*: It is a bluish white masterbatch containing 50% of a premium TiO_2 rutile coated grade on a special PP carrier. Its excellent dispersion and small pellet size makes it suitable for the coloration of opaque PET bottles, but it can also be used in injection moulding or thermoforming applications. It is a cost efficient proposal.

m) *KRITILEN WHITE PET634*: It is a milky white masterbatch containing 40% of a premium TiO_2 rutile coated grade in a PET carrier. It is proposed for use for PET bottles, injection moulding and thermoforming applications.

n) *KRITILEN BLACK PPA932P and KRITILEN BLACK PT6302* : Black masterbatches containing 30% P type carbon black in a PP homopolymer and PET carrier respectively, proposed for use for PET bottles, injection moulding and thermoforming products. PPA932P also contains a selected package of antioxidants in its recipe, which protect the end application polymer from thermal degradation during processing and end use.

The production of PET bottles requires the use of specialty additive masterbatches, which enable the end processor to optimize the production process and also improve the end product properties and functionality. PLASTIKA KRITIS S.A. have developed a broad category of such additive masterbatches, which is presented below:

o) *KRITILEN SL PT6100*: It is a slip and anti-scratch masterbatch in PET carrier.It contains 10% of a unique additive for PET, which reduces friction on the end product surface. This leads to a range of end product improvements, such as improved packing and de-nesting, reduced scuff and scratch, easier processing and 60% of mould release force. Kritilen SL PT6100 is distributed evenly throughout the polymer during the melt phase. During cooling, the molecules of active ingredient migrate to the surface, forming a thin lubricating layer. Its addition levels are typically 2%-3%. It contains raw materials, which according to their suppliers, comply with EU Directive 94/62/EC and FDA requirements.
Note: Kritilen SL PT6100, if added >5% at the end product, does not comply with the FDA legislation for indirect food applications (it refers to substances that may come into contact with food as part of packaging or processing equipment).

p) *KRITILEN CE9126*: It is chain extender masterbatch in PET carrier. It contains 15% of a multi-functional reactive polymer designed to reverse the degradation of PET. The active agent, included in this masterbatch recipe, is a polymeric coupling agent that reacts with degraded polymers to restore the original molecular weight, as well intrinsic viscosity and melt viscosity. This means that low quality recycle can be upgraded or that good quality recycle can be treated more robustly. The proposed Kritilen CE9126 addition rate is 1.5%-4.0%, depending on the recycled resin quality and proportion in the blend. Kritilen CE9126 should not be used at processing temperatures exceeding 300deg. Celsius. CE9126 reacts quickly. Its reaction will be over 99% complete, if at least 2min residence time is provided at 200deg. Celsius, in a well mixed system. Alternatively, 30sec residence time at 280deg. Celsius will provide 99% completion. Kritilen CE9126 contains raw materials, which according to their suppliers, comply with EU Directives 2002/72/EC and 94/62/EC, as well as with FDA requirements.

q) *KRITILEN UV PT2320*: It is a UV absorber masterbatch in a PET carrier, containing 15% of active ingredients. It is proposed for use in PET bottles, in order to protect the bottle content from degradation caused by the UV radiation. Kritilen UV PT2320 contains raw materials, which according to their suppliers, comply with EU Directive 94/62/EC and BGA legislation. Its indicative addition rate is 2%-4%.

The Plastika Kritis masterbatches for PET bottles can be offered in standard pellets (with pellet diameter 2.5mm - 3.5mm) or microgranules (with pellet diameter 1.0mm - 1.5mm).