



**KRITILEN**<sup>®</sup>  
bio-degradable

Solutions for  
**biodegradable**  
carrier bags



**Biodegradable**  
Compounds  
and Masterbatches

 **PLASTIKA  
KRITIS S.A.**



Carrier bags produced with **Compound BI0563** can be marked with:

**KRITILEN**<sup>®</sup>  
bio-degradable



**Kritilen<sup>®</sup>**

**Compound BI0563**

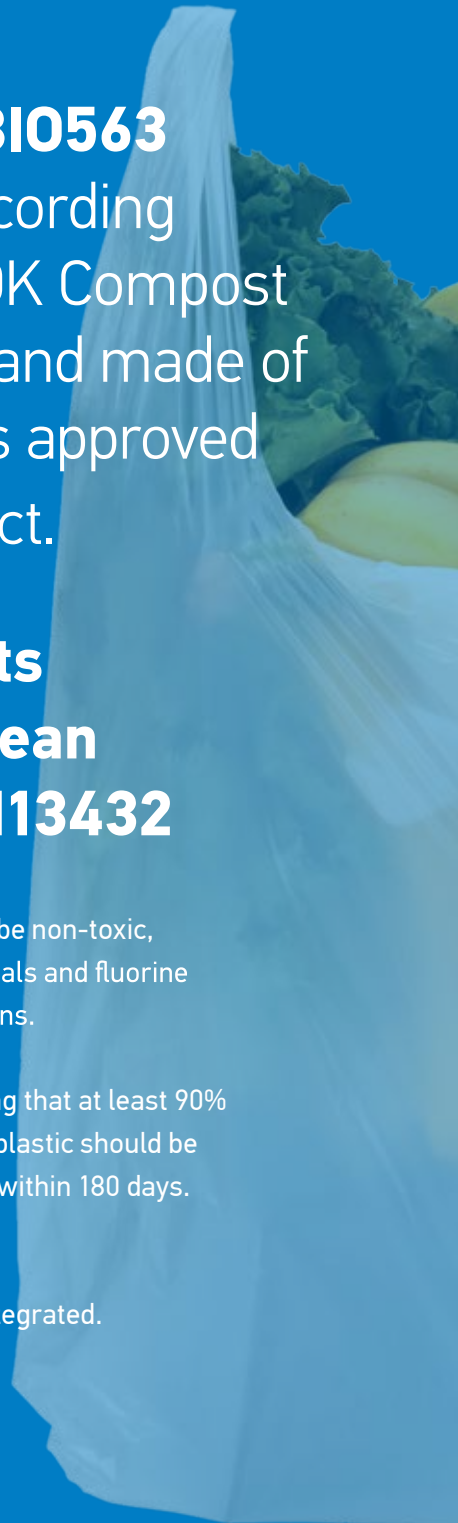
is certified according to EN13432, OK Compost INDUSTRIAL and made of raw materials approved for food contact.

## Requirements of the European Standard EN13432

Composted material should be non-toxic, i.e. not containing heavy metals and fluorine above specified concentrations.

To be biodegradable, meaning that at least 90% of the carbon present in the plastic should be converted to carbon dioxide within 180 days.

To be environmentally safe, non-eco toxic and fully disintegrated.





## Composting

The decomposition process of organic waste (e.g. plastic packaging) by microbes, generating compost.

Composting is a process that follows biodegradation.

The composting of organic waste needs adequate levels of heat, moisture and oxygen. Under these conditions microbes mixed in organic waste will convert it to compost.

Plastics can be considered fully compostable when complying with the European Standard Regulations EN13432 or/and the American Standard ASTM D6400. These norms require compostable materials to be completely decomposed within a prescribed timeframe, without leaving harmful ingredients in the environment.

## Biodegradation

The chemical process by which materials undergo aerobic or anaerobic decomposition into carbon dioxide, water, biomass and metal salts.

Crucial factor for the biodegradation process is the presence of microbes existing in the environment, mainly deriving from organic waste.

Biodegradation rate depends on environmental conditions (temperature, humidity), chemical structure of the material and the specific characteristics of the final product.

A biodegradable material is not necessarily compostable.

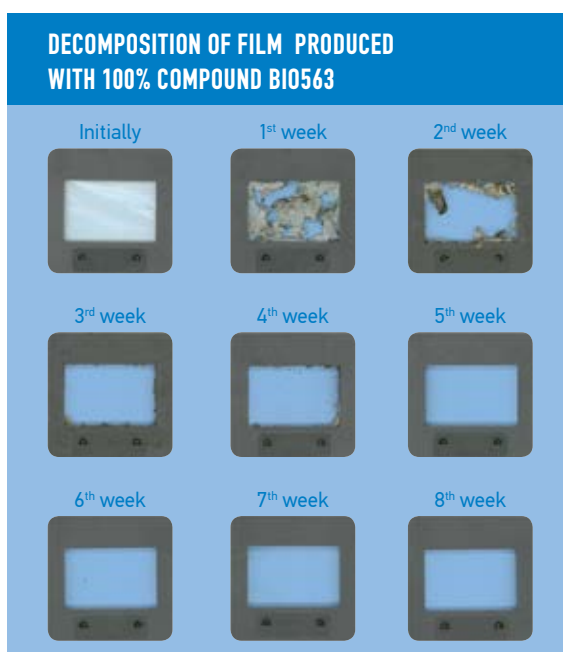
# KRITILEN® COMPOUND BIO563

the certified solution  
for **biodegradable  
compostable**  
plastic carrier bags

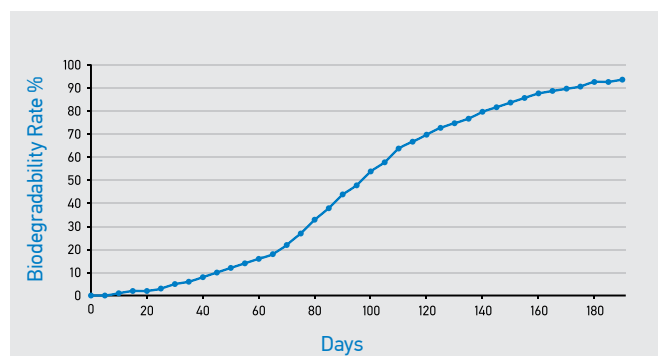
Plastika Kritis has developed Kritilen® Compound BIO563 for the production of biodegradable plastic carrier bags. It can be used in conventional blown film lines, without modifications.

It is based on a specifically selected blend of biodegradable polymers, which are substantially bio based. Since it imparts a milky color effect, the addition of extra white masterbatch is not required.

The use of Compound BIO563 enables plastic processors to produce films with thickness below 20µm, depending on the blown film line capabilities. Films produced with Compound BIO563 exhibit excellent mechanical properties and can be printed with inks commonly used for conventional polyethylene bags.



Decomposition time sequence of 27-30µm film (100% Compound BIO 563) within twelve weeks under industrial composting conditions.



Biodegradability rate of a 25µm film, produced with 100% KRITILEN® COMPOUND BIO563 under industrial composting conditions.

PROPERTY	UNIT	METHOD OF MEASUREMENT	FILM 100% PRODUCED WITH COMPOUND BIO563
Tensile Strength at break (machine direction)	Mpa	EN ISO 527-3	18 - 22
Tensile Strength at break (transverse direction)	Mpa	EN ISO 527-3	15 - 20
Elongation at break (machine direction)	%	EN ISO 527-3	300 - 450
Elongation at break (transverse direction)	%	EN ISO 527-3	350 - 550
Impact Strength	gr	ISO 7765 - 1(A)	100 - 110
Puncture resistance - Maximum load	N	ASTM D4833	15 - 20
Puncture resistance - Displacement	mm	ASTM D4833	~8

Indicative mechanical properties for a 20µm film produced with 100% Compound BIO563

In combination  
with **COMPOUND  
BI0563** we also  
recommend



## Kritilen® White BI08153

Masterbatch with titanium dioxide in a biodegradable carrier, which can be added to Compound BI0563 or other biopolymers, resulting in a brighter white color and higher opacity.

## Kritilen® Filler BI0527

Filler masterbatch with specifically selected calcium carbonate in a biodegradable carrier. It can be mixed up to 30% with Compound BI0563, resulting in improved antiblocking properties, better bubble stability and faster cooling, while improving the weldability and printability of the film.

## Kritilen® Filler PL776

Filler masterbatch with specifically selected calcium carbonate in an alternative biodegradable carrier. It can be mixed with Compound BI0563 up to 20%, improving cooling, cutting, welding and printing of the film. Furthermore, it can be added in PBAT films at 30%-40% in order to facilitate cutting and down gauging.

KRITILEN®	BASE RESIN	ACTIVE INGREDIENT	CONCENTRATION OF ACTIVE INGREDIENT (%)	ADDITION RATE (%)	FOOD APPROVED
<b>Compound BI0563</b>	Blend of biodegradable polymers	Combination of additives		<b>70 - 100</b>	✓
<b>White BI08153</b>	PBAT (polybutyrate adipate terephthalate)	Titanium Dioxide	<b>50</b>	<b>1 - 10</b>	✓
<b>Filler BI0527</b>	PBAT (polybutyrate adipate terephthalate)	Calcium Carbonate	<b>60</b>	<b>10 - 30</b>	✓
<b>Filler PL776</b>	PLA (polylactic acid)	Calcium Carbonate	<b>60</b>	<b>10 - 20</b>	✓



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