

# MAXITHEN<sup>®</sup> PET

Masterbatch for colouring

Polyethyleneterephthalate

# MAXITHEN® PET

## HISTORY

Since the introduction of PET (PolyEthyleneTerephthalate) bottles for the beverage industry, this material has become an independent packaging type with enormous growth potential due to its outstanding material properties and the high acceptance from the market and consumers.

## OUR VISION

As technology leaders in the field of masterbatch production for bottle closures, it was evident to us that we should also concern ourselves with the development and production of PET masterbatches.

## OUR AIM

Our aim was to develop PET masterbatches with maximum dispersibility whilst retaining the colour qualities. The higher the viscosity, the better the properties of the PET regarding gas permeability and resistance to heat and aggressive substances.

## THE RESULT

Colour concentrates in pellet form, suitable for use with polyethylene terephthalate (PET), based on inorganic and organic colorants as well as pigment concentrates, dispersed in a PET carrier system. Standard PET masterbatches are highly concentrated and enable economical colouring due to the optimised, high colour intensity.

# MAXITHEN® PET

## APPLICATIONS

MAXITHEN® PET masterbatches are suitable for most production processes:

- ✓ Production of injection moulded preforms
- ✓ Injection stretch moulding
- ✓ Film extrusion
- ✓ Sheet extrusion

## ADVANTAGES

### **vs. wax based masterbatches**

- ✓ no plate-out on the screw
- ✓ no compatibility problems during processing
- ✓ low dosage rates possible
- ✓ no feed hopper cooling required
- ✓ ready to use with natural PET due to post- crystallisation
- ✓ carrier system does not influence overall migration (OM) values.

### **vs. liquid colour concentrates**

- ✓ no plate-out on the screw
- ✓ easy storage
- ✓ no compatibility problems during processing
- ✓ excellent dosing precision
- ✓ easy handling and change-over of colours
- ✓ wide range of dosage rates possible – depending on customer requirements
- ✓ carrier system does not influence overall migration (OM) values.

MAXITHEN® PET MASTERBATCHES ARE FOOD APPROVED AND IN CONFORMANCE WITH REGULATIONS AS INDICATED IN OUR LETTERS OF CONFORMITY.

# MAXITHEN® PET

## PELLET TYPES

MAXITHEN® PET masterbatches can be delivered in three pellet types:

Standard Pellets

MAXITHEN® PET ...

Micro Pellets

MAXITHEN® PET ... MG

Speciality Pellets (finer than Micro) MAXITHEN® PET ... SG

## PREDRYING

The PET polymer should be dried according to the recommendations of the polymer supplier.

Our PET masterbatches can also be supplied post-crystallised (suffix ... CR), enabling them to be blended with the PET polymer and dried together at temperatures up to 190°C.

Standard MAXITHEN® PET products (without post-crystallisation) can be dosed directly over the screw during injection moulding and extrusion processing. A post-crystallised MAXITHEN® PET product is not required in these cases. The prerequisite is that the feed unit is positioned directly over the screw, without a stirrer and with an appropriate cooling mechanism.

## FOOD AND COSMETICS PACKAGING

Products which are marked as being suitable for use in food and cosmetics packaging have been formulated to comply with the EU guidelines for food and cosmetics packaging which comes into direct contact with the packaging contents.

Please request a declaration of conformity from us for the product concerned.

# MAXITHEN® PET

## PIGMENT PREPARATION BASED ON PET (POLYETHYLENE TEREPHTHALATE)

DOSAGE RATE:	according to the opacity required – see tables
HEAT STABILITY:	(dwell time 5 minutes) – see tables
LIGHT STABILITY:	in accordance with DIN 53388 – see tables evaluation according to the blue wool scale (DIN 54003). 8 = best value, 1 = worst value
HUMIDITY:	surface humidity up to a maximum of 0.5%
PROCESSING:	MAXITHEN® PET standard products have been designed to be fed directly into the processing machine via a dosing system.
DRYING:	MAXITHEN® PET standard products should be pre-dried together with the polymer for at least 4 hours at a maximum temperature of 65°C if required.
NOTE:	The PET polymer should be dried according to the recommendations of the polymer supplier. Our PET masterbatches can also be supplied post-crystallised (suffix ... CR), enabling them to be blended with the PET polymer and dried together at temperatures up to 190°C.
FORM OF SUPPLY:	Masterbatch in pellet form, packed in UV stabilised 20/25 kg PE bags, on pallets, covered with a UV stabilised hood (standard packaging). A combined MAXITHEN® colour/UV/AO masterbatch has been used for colouring and stabilising the packing material in order to protect both the packaging and its contents.
STORAGE CONDITIONS:	A storage time of 12 months should not be exceeded. The product should be stored in a cool, dry location and be protected from sunlight. Once opened, bags should be kept tightly closed in order to prevent the absorption of moisture from the air. If necessary, goods should be dried before use.

# MAXITHEN® PET

This data is for information only and serves to support and provide advice to our customers. The information has been obtained from laboratory tests under ideal and closely controlled conditions, therefore tests must be carried out based on the customer's polymer and dosage rates. Additional factors must be taken into consideration in practical tests. Our datasheets can not be used to infer guarantees for end products.

Gumpoldskirchen, September 2008

# MAXITHEN® PET

## Transparent colours

Product MAXITHEN® 8 transparent colours			Dos.	Temp. stab.	Light fastness	Food / cosmetics packaging
PETD	2287/03	Yellow	1 %	280	7	Yes
PETD	37117	Orange	0.5 %	300	7	Yes
PETD	49117/15	Red	0.5 %	300	7	Yes
PETD	47397/005	Red	1 %	300	7	Yes
PETD	58357/01	Blue	0.5 %	300	7	Yes
PETD	5M6167	Blue	1 %	300	7	Yes
PETD	625720	Green	1 %	300	7	Yes
PETD	817037	Brown	1 %	300	7	Yes

DOS.:

TEMP. STAB.:

LIGHT FASTNESS:

ALL PRODUCTS ARE:

Dosage – in %

Temperature stability – in °C

According to the wool scale, 1-8, 8= best value

suitable for food and cosmetics packaging according to guideline 2002/72/EG (including additions) as well as CE resolution AP(89)1.

free from pigments based on toxic heavy metals

free from diarylid pigments

Due to the low pigment concentration, the values for thermal stability and light fastness must be considered as guidelines only and should therefore be tested under practical conditions.

# MAXITHEN® PET

## Opaque colours

Product MAXITHEN® 8 opaque colours			Dos.	Temp. Stab.	Light fastness	Food / cosmetics packaging
PET	1070/50	White	3 %	300	8	Yes
PETD	218727	Yellow	3 %	300	7	Yes
PETD	37097	Orange	3 %	300	7	Yes
PETD	423477	Red	3 %	300	7	Yes
PET	528407	Blue	3 %	300	8	Yes
PETD	528867	Blue	3 %	300	8	Yes
PETD	626567	Green	3 %	300	7	Yes
PET	817487	Brown	3 %	300	8	Yes

DOS.: Dosage – in %  
 TEMP. STAB.: Temperature stability – in °C  
 LIGHT FASTNESS: According to the wool scale, 1-8, 8= best value  
 ALL PRODUCTS ARE: suitable for food and cosmetics packaging according to guideline  
 2002/72/EG (including additions) as well as CE resolution AP(89)1.  
 free from pigments based on toxic heavy metals  
 free from diarylid pigments

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# MAXITHEN® PET

## Effect colours - metallic

Product MAXITHEN® 6 effect colours - metallic			Dos.	Temp. Stab.	Light fastness	Food / cosmetics packaging
PET D	225037Metallic	Yellow	2 %	300	7	Yes
PET D	4A4877Metallic	Red	2 %	300	7	Yes
PET D	5M6087Metallic	Blue	2 %	300	7	Yes
PET D	6A9337Metallic	Green	2 %	300	7	Yes
PET	790887/20Metallic	Silver	2 %	300	8	Yes
PET D	7A4047Metallic	Gold	2 %	260	7	yes

DOS.: Dosage – in %  
 TEMP. STAB.: Temperature stability – in °C  
 LIGHT FASTness: According to wool scale, 1-8, 8= best value  
 ALL PRODUCTS ARE: suitable for food and cosmetics packaging according to guideline 2002/72/EG (including additions) as well as CE resolution AP(89)1.  
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# MAXITHEN® PET

## Effect colours - pearlescent

Product MAXITHEN® 8 effect colours - pearlescent			Dos .	Temp. Stab.	Light fastness	Food / cosmetics packaging
PET	791707/25Perlmutter	White	4 %	300	8	Yes
PETD	222037Perlmutter	Yellow	4 %	300	7-8	Yes
PETD	3A1387Perlmutter	Orange	4 %	300	7-8	Yes
PETD	429207Perlmutter	Red	4 %	300	7-8	Yes
PETD	4A4887Perlmutter	Pink	2 %	300	7	Yes
PETD	5M6077Perlmutter	Blue	2 %	300	7	Yes
PETD	5A7787Perlmutter	Blue	4 %	320	5-6	Yes
PETD	6A3357Perlmutter	Green	4 %	300	5-6	Yes

DOS.: Dosage – in %  
 TEMP. STAB.: Temperature stability – in °C  
 LIGHT FASTNESS: According to wool scale, 1-8, 8= best value  
 ALL PRODUCTS ARE: suitable for food and cosmetics packaging according to guideline 2002/72/EG (including additions) as well as CE resolution AP(89)1.  
 free from pigments based on toxic heavy metals  
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## ADDITIVES

### ANTIBLOCK

PET 794490ABCR  
PET 7A2220ABGL  
PET 7A2400ABGL  
PET 7A3970ABGL  
PET 7AA0010ABGL  
PET 7AA0020ABGL  
PET G795060AB  
PET G7A2400ABGL

### ANTIMICROBIAL

PET 7AA3170AM

### ANTISTATIC

PET 794460ASPCR  
PET 7A8370AS  
PET 7A8370ASCR

### CRYSTALIZER

PET 7A2337CRMG

### FROST

PET 7AA5580FROST

### NUCLEATOR

PET 793780NUCR  
PET 794190NUCR  
PET 794550NU  
PET 7A7410/13NU  
PET 7A7410NU  
PET 7AA0250NUCR

### UV-STABILIZER

PET 794140C115UVCR  
PET 794140UVCR  
PET 7A8540UV  
PET 7AA1140UVCR

### SLIP AGENTS

PET 794980GL

### MODIFIER

PET 795430MOD  
PET 795440MOD  
PET 7AA3380MOD

DOS.:

TEMP. STAB.:

LIGHT FASTNESS:

ALL PRODUCTS ARE:

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