



MAXITHEN® PET

**Masterbatch for Colouring
Polyethylene Terephthalate**

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 with market and consumers.

Vision

As technology leader 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 batches.



Our Aim

Our aim was to develop PET-masterbatches with maximum dispersibility whilst retaining the colour qualities.

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-batches are highly concentrated and enable economical colouring due to the optimised, high colour intensity.

MAXITHEN® PET



Applications

MAXITHEN® PET Masterbatch is suitable for most production processes:

- ✓ Thermoforming
- ✓ Blow Moulding
- ✓ Injection Moulding
- ✓ Stretch Moulding
- ✓ Sheet Extrusion
- ✓ Film Extrusion

Advantages

vs. wax based powders

- ✓ no compatibility problems during processing
- ✓ low dosage rates are possible
- ✓ no feed hopper cooling
- ✓ ready to use with natural PET due to post- crystallisation

vs. liquid colour concentrates

- ✓ no compatibility problems during processing
- ✓ excellent dosing precision
- ✓ easy handling and change-over of colours
- ✓ wide range of dosage rates possible

MAXITHEN® PET Masterbatch is food approved and in conformance with regulations as indicated in our letters of conformity.

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**

MAXITHEN® PET

Standard Range - Transparent

Product MAXITHEN® 8 transparent colours			Dosage	Thermal stability	Light- fastness	Food Approval GER +AT, Cd/ Pb/ Diarylide-free
PETD	27027/10	Yellow	0,5%	300°C	7	yes
PETD	37117	Orange	0,5%	300°C	7	yes
PETD	49117/15	Red	0,5%	300°C	7	yes
PETD	59170	Blue	1%	300°C	7	yes
PETD	5280/015	Blue	1%	300°C	8	yes
PETD	625720	Green	1%	300°C	7	yes
PETD	626447/13	Green	1%	300°C	7	yes
PETD	817037	Brown	1%	300°C	7	yes

Dosage:	Dosage rate - values in %
Thermal stability:	values in °C
Lightfastness:	Woolscale 1-8; 8 = best value
All products are:	Food approved in Germany/Austria
	Free of pigments based on toxic heavy metals
	Free of 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

Standard Range - Opaque

Product MAXITHEN® 8 opaque colours			Dosage	Thermal stability	Light- fastness	Food Approval GER+AT, Cd/Pb/Diarylide-free
PET	1070/50	White	3%	300°C	8	yes
PETD	218727	Yellow	3%	300°C	7	yes
PETD	37097	Orange	3%	300°C	7	yes
PETD	423477	Red	3%	300°C	7	yes
PET	528407	Blue	3%	300°C	8	yes
PETD	528867	Blue	3%	300°C	8	yes
PETD	626567	Green	3%	300°C	7	yes
PET	817487	Brown	2%	300°C	8	yes

Dosage: Dosage rate - values in % per weight
Thermal stability: values in °C
Lightfastness: Woolscale 1-8; 8 = best value
All products are: Food approved in Germany/Austria
 Free of pigments based on toxic heavy metals
 Free of 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

PRODUCT INFORMATION

Colour concentrates for use in polyethylene terephthalate (PET), in pellet form, based on anorganic and organic colourants and dyes, dispersed in a PET carrier system. Standard PET batches are highly concentrated, and therefore economical to use, due to their optimised, high colour intensity.

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.

Thermal Stability: Tests were carried out with PET 9921W and the masterbatch types specified in the table. The dwell time was 5 minutes. During the tests, the temperature of the mass was increased from 200 to 300°C in steps of 10°C. At the temperature stated in the table, the change in colour did not exceed $\Delta E_{ab}^* = 3$ according to DIN 6174.

Lightfastness: According to DIN 53388. The evaluation occurs with the help of the eight-step blue scale based on DIN 54003, where rating 8 denotes excellent and rating 1 very poor lightfastness.

The colour fastness results specified in the tables were derived under our test conditions. As processing conditions, pigment concentration, temperature and processing time, as well as the polymer used can have an influence on colour fastness, we recommend corresponding trials before use.

MAXITHEN® PET

PRODUCT INFORMATION

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.

Processing: Standard quality MAXITHEN® PET batches are feed directly into the manufacturing process by the dosage system.

Drying: The PET polymer should be handled according to the instructions of the supplier. All MAXITHEN® PET products can also be offered post-crystallised on request (suffix:**CR**), enabling them to be blended together with the PET polymer at high temperature drying processes of up to 190°C.

MAXITHEN® PET products with the suffix **CR** can either be dried separately or dried premixed with the PET polymer. The products should be dried with a dehumidifying air dryer system up to a maximum temperature of 190°C. The PET polymer should be handled according to the instructions supplied by the supplier.

MAXITHEN® PET standard products (without suffix **CR**) can, if necessary, be dried with an air dryer. They can be dried either separately or premixed with the PET polymer for at least 4h, at temperatures up to max. 65°C.

All information in this MAXITHEN® PET Product Information has been obtained from laboratory tests under ideal and closely controlled conditions. The information should act as a guide only and should not be construed as guaranteeing specific properties or suitable for a particular application. Therefore, trials by customers using their polymers and their conditions are highly recommended.

February, 2006

Contacts

Gabriel-Chemie Gesellschaft m.b.H.

Industriestrasse 1
A-2352 Gumpoldskirchen
T +43 (0)2252 / 636 30-0
F +43 (0)2252 / 627 25-0
www.gabriel-chemie.com
info@gabriel-chemie.com

Gabriel-Chemie UK LTD

Transfesa Road
Paddock Wood. Kent, TN 12 6 UT
T +44 (0)1892 / 83 65 66
F +44 (0)1892 / 83 69 79
info@uk.gabriel-chemie.com

Gabriel-Chemie Bohemia s.r.o.

K Lihovaru 172
CZ-533 41 Lázně Bohdaneč
T +420 46 / 604 92 01
F +420 46 / 604 92 04
info@cz.gabriel-chemie.com

Gabriel-Chemie France

269/287 rue de la Garenne
F-92000 Nanterre
T +33 (0)1 / 72 69 01 88
F +33 (0)1 / 72 71 84 84
info@fr.gabriel-chemie.com

Gabriel-Chemie Polska sp. z o.o.

Parzniewska 4
PL-05 804 Pruszków
T +48 (0)22 / 738 64 00
F +48 (0)22 / 738 64 01
info@pl.gabriel-chemie.com

ООО Gabriel-Chemie RUS

пос. Dorohovo, Ruzsky raion
Moskovskaya st. d.8
RU-143160 Russia
T +7 495 737 62 36
F +7 495 737 62 36
info@ru.gabriel-chemie.com

Gabriel-Chemie Deutschland GmbH

Ritzenschattenhalb 1
D-87480 Weitnau/Oberallgäu
T +49 (0)8375 / 9201-0
F +49 (0)8375 / 9201-30
info@de.gabriel-chemie.com

Gabriel-Chemie Schweiz AG

Kirchstrasse 17
CH-8274 Gottlieben
T +41 (0)71 / 666 60 90
F +41 (0)71 / 666 60 99
info@ch.gabriel-chemie.com

Gabriel-Chemie Hungária Kft.

Debreceni ut 269
H-4400 Nyiregyhaza
T +36 42 / 594 080
F +36 42 / 594 081
info@hu.gabriel-chemie.com

Gabriel-Chemie Romania S.R.L

P.O. Box O.P.16 – C.P.06
Bucuresti, Romania
T +40 72 / 2434 357
F +40 31 / 4024 027
info@ro.gabriel-chemie.com

Our net of AGENTS and DISTRIBUTORS is listed on our website:
www.gabriel-chemie.com