

TINOX CHEMIE GMBH

# Fibre-Grade White Masterbatch

TiO<sub>2</sub> delustering and whitening masterbatch for PET, PA6/PA66 and bicomponent filament and staple fibre

**2012**

Founded in  
Düsseldorf

**60+**

Countries served

**20+**

Years in TiO<sub>2</sub>

**5–60%**

TiO<sub>2</sub> loadings

Your TiO<sub>2</sub> specialist from Düsseldorf · [tincoxchem.de](http://tincoxchem.de)



# About TINOX CHEMIE GMBH

TINOX CHEMIE GMBH

Your  $\text{TiO}_2$  specialist from Düsseldorf, Germany

TINOX CHEMIE GMBH was founded in Düsseldorf in 2012 to supply titanium dioxide pigments to manufacturers of coatings, plastics, inks, paper, food, cosmetics and fibres.

Our team brings more than 20 years of  $\text{TiO}_2$  supply-chain experience, including hands-on background in German fibre-grade anatase production. That pigment know-how is the starting point for our fibre masterbatch range: we understand the  $\text{TiO}_2$  inside every pellet.

With operations in Germany, Hong Kong and China, we combine Asian manufacturing scale with European service, documentation and technical support.



## Düsseldorf HQ

European headquarters and EU warehouse



## Chengdu

Asian warehouse and China office (since 2019)



## 60+ countries

Customers across six industries worldwide



## REACH · TDS

Full documentation and 24 h response on enquiries

# Why TINOX white masterbatch

TINOX CHEMIE GMBH

Pigment expertise, certified production, European service

01

## Pigment-first expertise

We select and qualify the fibre-grade  $\text{TiO}_2$  ourselves, so dispersion, whiteness and filtration start at the right point.

02

## Certified manufacturing partner

Produced on automated lines by our partner plant in China, certified to ISO 9001, GRS 4.0 and with a CNAS-accredited lab.

03

## Low pack-pressure rise

Every lot is tested for filter pressure ( $\Delta P$ ), colour  $\Delta E$ ,  $\text{TiO}_2$  content and moisture before release.

04

## Tailored to your line

$\text{TiO}_2$  loadings from 5% to 60%, PET, r-PET, PA6/PA66 and PE/PET bicomponent carriers, trial support from our team.

# Our manufacturing partner

TINOX CHEMIE GMBH

TINOX masterbatch is produced by a leading, listed Chinese masterbatch manufacturer

**~100,000 t**

Annual masterbatch capacity

**30 years**

Fibre masterbatch experience  
since 1995

**6**

Production bases

**80+**

Patents

## Certifications held by the partner plant

ISO 9001:2015

GRS 4.0 (Intertek)

CNAS lab, ISO/IEC  
17025

*Certificates available on request.*



Automated fibre masterbatch production line

# Smart, integrated production

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Automated from dosing to extrusion



**120-station automatic dosing**



**AGV transport**



**Mixing**



**Extrusion**

## ● Consistent quality

Precise automatic dosing removes manual weighing errors.

## ● Scalable output

Order size is not limited by manual labour.

## ● Clean colour changes

Large single-pigment batches are made first, then blended into the finished grade.

# Quality control and testing

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CNAS-accredited laboratory (since October 2023)



## Laboratory equipment

- Filter pressure test extruders
- Spectrophotometers
- Laser particle size analyser
- Nano particle size analyser
- Melt flow rate tester
- Viscosity tester
- Capillary rheometer
- DSC and TGA
- FTIR spectrometer
- Gas chromatograph
- Universal testing machine
- Xenon-arc and QUV weathering



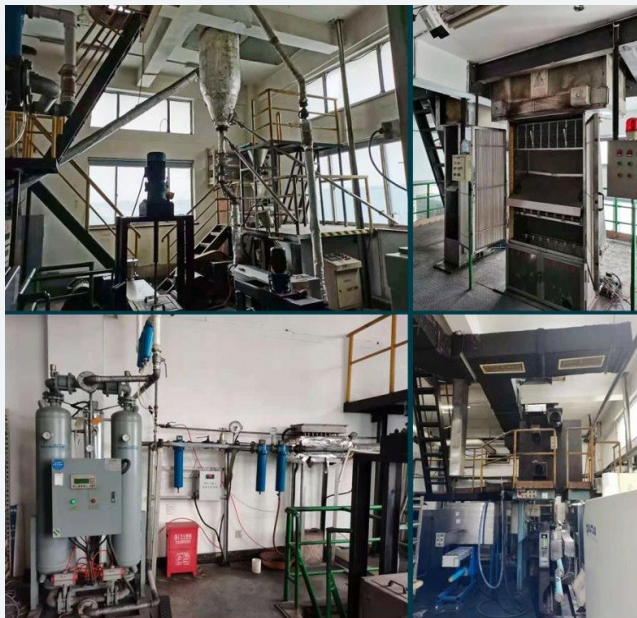
## Every lot

Filter pressure  $\Delta P$ , colour  $\Delta E$ ,  $\text{TiO}_2$  content, IV, melting point, moisture

# Fibre pilot lines

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Every new grade is spun before it reaches your line



**8-end melt-spinning POY pilot line**



**Multifunctional wet-spinning test line**

## What this means for you

- Dispersion and pack-pressure behaviour are checked under real spinning conditions.
- Customer-specific loadings can be trialled before scale-up.
- Additional pilot lines for plastics (injection, twin-screw, monofilament) and film (co-extrusion, biaxial stretching).

**POY · FDY**  
**DTY · Staple**

Chip spinning and direct  
melt spinning

# TINOX white masterbatch range

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Delustering, whitening and optical brightening for synthetic fibres

| Grade                                          | Carrier            | Active content       | Typical dosage                 | Main use                                                     |
|------------------------------------------------|--------------------|----------------------|--------------------------------|--------------------------------------------------------------|
| <b>TINOX 1176A 50</b>                          | PET / r-PET        | TiO <sub>2</sub> 50% | 0.6% semi-dull<br>4% full-dull | Direct melt spinning, full-dull POY / FDY / staple           |
| <b>TINOX 1236A 10</b>                          | PET / r-PET        | TiO <sub>2</sub> 10% | 3% semi-dull                   | Chip spinning, recycled semi-dull chips, flake repelletising |
| <b>TINOX 0036A 50</b>                          | PA6 / PA66         | TiO <sub>2</sub> 50% | 4%                             | Nylon filament, staple, sea-island yarn                      |
| <b>TINOX 0753A 60</b><br><b>TINOX 1038A 60</b> | PET                | TiO <sub>2</sub> 60% | 6–7%                           | PE/PET bicomponent (ES) staple for hygiene                   |
| <b>TINOX 0617A 50</b>                          | PET, antimony-free | TiO <sub>2</sub> 50% | 8%                             | Sb-free ES fibre for hygiene                                 |
| <b>TINOX 9012A 12</b>                          | PET                | OB-1 12%             | 0.6%                           | Whitening of recycled staple fibre                           |

Custom TiO<sub>2</sub> loadings from 5% to 60% on request. Pellet size 2–3 mm.

# PET full-dull masterbatch

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High-load  $\text{TiO}_2$  masterbatch for direct melt spinning

## TINOX 1176A 50

PET ·  $\text{TiO}_2$  50%

- Carrier: PET and r-PET
- For filament, staple fibre and bottle-flake repelletising
- Designed for direct melt spinning of full-dull yarn
- POY / DTY, FDY and staple fibre
- 0.6% addition gives semi-dull; 4% gives full-dull

### Typical specification

| Property                    | Spec                 |
|-----------------------------|----------------------|
| $\text{TiO}_2$ content      | $50.0 \pm 0.5\%$     |
| Colour $\Delta E$ (D65/10°) | $\leq 0.80$          |
| Filter pressure $\Delta P$  | $\leq 1.00$ MPa      |
| Intrinsic viscosity         | $0.25 \pm 0.05$ dL/g |
| Weight / 100 pellets        | $2.30 \pm 0.20$ g    |
| Melting point               | $250 \pm 4$ °C       |
| Irregular pellets           | $\leq 0.40\%$        |
| Moisture                    | $\leq 0.40\%$        |



Custom  $\text{TiO}_2$  loadings from 5% to 60% available on request.

# PET semi-dull masterbatch

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Low-load  $\text{TiO}_2$  masterbatch for chip spinning and recycled semi-dull chips

## TINOX 1236A 10

PET ·  $\text{TiO}_2$  10%

- Carrier: PET and r-PET
- For filament, staple fibre and bottle-flake repelletising
- Chip spinning, direct melt spinning and recycled semi-dull chips
- POY / DTY, FDY and staple fibre
- 3% addition gives semi-dull

### Typical specification

| Property                    | Spec                 |
|-----------------------------|----------------------|
| $\text{TiO}_2$ content      | $10.0 \pm 0.2\%$     |
| Colour $\Delta E$ (D65/10°) | $\leq 0.80$          |
| Filter pressure $\Delta P$  | $\leq 1.00$ MPa      |
| Intrinsic viscosity         | $0.58 \pm 0.05$ dL/g |
| Weight / 100 pellets        | $1.80 \pm 0.20$ g    |
| Melting point               | $250 \pm 4$ °C       |
| Irregular pellets           | $\leq 0.40\%$        |
| Moisture                    | $\leq 0.40\%$        |



Custom  $\text{TiO}_2$  loadings from 5% to 60% available on request.

# Nylon delustering masterbatch

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TiO<sub>2</sub> masterbatch for PA6 and PA66 fibres

## TINOX 0036A 50

PA6 / PA66 · TiO<sub>2</sub> 50%

- Carrier: PA6 and PA66
- For filament, staple fibre and sea-island bicomponent yarn
- POY / DTY, FDY, staple and sea-island
- Pellet size 2–3 mm
- Recommended addition: 4%

### Typical specification

| Property                 | Spec          |
|--------------------------|---------------|
| TiO <sub>2</sub> content | 50%           |
| Colour ΔE (D65/10°)      | ≤ 1.00        |
| Filter pressure ΔP       | ≤ 2.00 MPa    |
| Weight / 100 pellets     | 2.10 ± 0.20 g |
| Melting point            | 226 ± 4 °C    |
| Irregular pellets        | ≤ 0.40%       |
| Moisture                 | ≤ 0.10%       |



# Whitening masterbatch for ES fibre

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For PE/PET bicomponent staple fibre in hygiene nonwovens

## TINOX 0753A 60

PET · TiO<sub>2</sub> 60%

- Grades: TINOX 0753A 60 and TINOX 1038A 60
- Carrier: PET
- For PE/PET bicomponent (ES) staple fibre
- Nonwovens for diapers, sanitary and hygiene products
- Recommended addition: 6–7%

### TINOX 0617A 50 antimony-free

TiO<sub>2</sub> 50%, recommended addition 8%

### Typical specification

| Property                 | Spec             |
|--------------------------|------------------|
| TiO <sub>2</sub> content | 60.0 ± 0.5%      |
| Colour ΔE (D65/10°)      | ≤ 0.80           |
| Filter pressure ΔP       | ≤ 1.00 MPa       |
| Intrinsic viscosity      | 0.20 ± 0.02 dL/g |
| Weight / 100 pellets     | 3.00 ± 0.20 g    |
| Melting point            | 259 ± 4 °C       |
| Irregular pellets        | ≤ 0.40%          |
| Moisture                 | ≤ 0.40%          |



# Optical brightener masterbatch

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Brighter, bluer white for staple fibre from recycled feedstock

## TINOX 9012A 12

PET · OB-1 12%

- Feedstock: bottle flake, foam and other recycled PET
- For staple fibre
- Fluorescent brightener OB-1 content: 12%
- Recommended addition: 0.6%

### Typical specification

| Property                    | Spec                 |
|-----------------------------|----------------------|
| OB-1 content                | 12%                  |
| Colour $\Delta E$ (D65/10°) | $\leq 0.80$          |
| Filter pressure $\Delta P$  | $\leq 1.00$ MPa      |
| Intrinsic viscosity         | $0.50 \pm 0.05$ dL/g |
| Weight / 100 pellets        | $2.50 \pm 0.20$ g    |
| Melting point               | $253 \pm 4$ °C       |
| Irregular pellets           | $\leq 0.40\%$        |
| Moisture                    | $\leq 0.40\%$        |



# Dosage guide

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Masterbatch addition needed for a target  $\text{TiO}_2$  level in the fibre

Addition % =

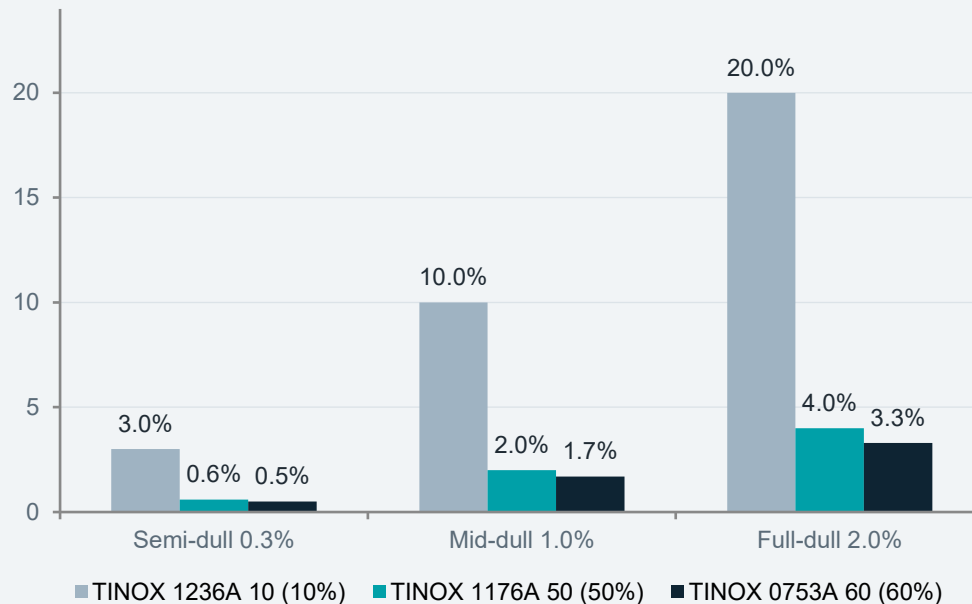
**Target  $\text{TiO}_2$  in fibre  $\div$   $\text{TiO}_2$  in masterbatch**

## Typical $\text{TiO}_2$ levels in fibre

- Semi-dull: about 0.3%
- Full-dull: about 2.0%
- ES hygiene fibre: about 3.6–4.2%

*Final levels depend on yarn type and customer standard; confirm in a line trial.*

Masterbatch addition required (%)



# Complementary range: black and colour

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One supplier for the full fibre colour palette



## PET black

**TINOX 62C 30**

28–30% carbon black and blue toner. Addition 3–8%. POY/DTY, FDY, staple.



## Recycled PET black

**TINOX 69A 27**

26–28% carbon black and blue toner for recycled chip and bottle-flake spinning. Addition 5–10%. GRS transaction certificate available.



## PA6/PA66 black

**TINOX 0052A 35**

35% carbon black and blue toner. Addition 3–8%; 15–20% for sea-island yarn.



## Colour masterbatch

**Custom colour match**

Matched to customer samples for PET carpet yarn, outdoor fabrics (AATCC 16.3, 200–1000 h) and home textiles, plus PA6 colours.

# Functional masterbatches

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Available on request through TINOX

## Far-infrared warming

Dark and light grades; FIR temperature rise 1.7–2.0 °C (GB/T 30127)

## Graphene

Antibacterial  $\geq 96\%$ , FIR emissivity 0.93

## Flame retardant

LOI > 32, UL 94 V-0; tenacity up to 3.8 cN/dtex

## Conductive

Core or sheath fibres;  $10^3$ – $10^6$   $\Omega \cdot \text{cm}$

## Antibacterial Ag / Cu / Zn

Up to 99% reduction (GB/T 20944.3)

## Cooling touch

q-max up to 0.37 J/cm<sup>2</sup>·s (GB/T 35263)

## Tracer / anti-counterfeit

Traceability for recycled PET fibre

## Photochromic

UV-responsive colour change in PP, PLA, PET

## PP nonwoven softener

Silky hand for hygiene spunbond

## PET nonwoven stiffener

Stiffer spunbond for filter media

## ZnO antibacterial slurry

UV protection and antibacterial for fibres

## Custom development

Tell us the function you need

# Where our masterbatch goes

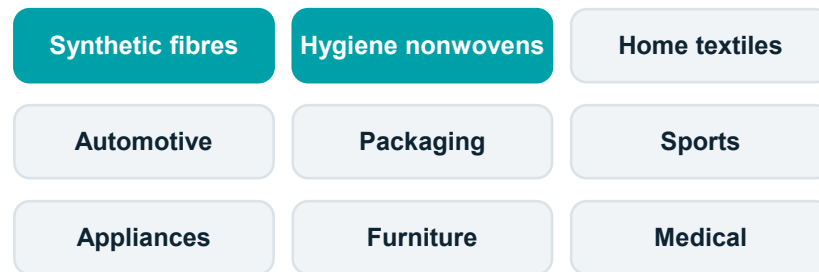
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Carriers and industries served

## Carrier resins



## Industries



**TINOX** CHEMIE GMBH

# Let's run a trial on your line

Send us your polymer, yarn type and target lustre. We will recommend a grade, dosage and supply samples with full TDS, SDS and REACH documentation.

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| <b>Web</b>          | <a href="https://tinoxchem.de">tinoxchem.de</a>          |
| <b>Email</b>        | <a href="mailto:info@tinoxchem.de">info@tinoxchem.de</a> |
| <b>Headquarters</b> | Düsseldorf, Germany                                      |

This brochure covers fibre masterbatch. For plastics, film, colour paste and ink products, please contact the TINOX team.

