

TINOX A-2480 Anatase Titanium Dioxide · Fibre Grade

Technical Data Sheet · Revision 4 · October 2026

TINOX A-2480 is an anatase titanium dioxide pigment produced by the sulphate process and finished with a multi-layer inorganic coating of aluminium, phosphorus and manganese compounds together with an organic treatment. It is engineered as a delustrant for polyamide fibers and for highly loaded fiber masterbatches. The coating follows the surface chemistry long established for polyamide-grade delustrants, while a very low content of chromophoric trace elements keeps the polymer clean and bright. A high aqueous-extract resistivity reflects a low level of soluble salts, which supports stable spinning and long pack life.

• Main applications

- Matting of polyamide 6 and polyamide 66 fibers and filaments, added during polymerisation or as an aqueous dispersion
- High-concentration polyamide white and colour masterbatches
- Polyester masterbatches
- Fibre products requiring UV screening, such as technical and protective fabrics

• Properties

- Efficient and uniform delustering, giving a soft matte appearance without impairing fiber tenacity at the recommended dosage
- Good dispersibility in water, caprolactam and polymer melt, with a low tendency to agglomerate
- Multi-layer Al / P / Mn inorganic coating plus organic treatment, for improved light stability compared with untreated anatase
- Very low iron, chromium and vanadium content for a clean, bright white
- High aqueous-extract resistivity ($\geq 100 \Omega \cdot m$), indicating a low level of soluble salts
- Low abrasion on spinnerets, guides and textile machinery, as is characteristic of anatase pigments

• Product specification

Item	Specification	Typical	Test method
Crystal form	Anatase	Anatase	X-ray diffraction
Appearance	White powder	—	Visual
TiO ₂ content [%]	≥ 95.0	95.5	ISO 591-1
Whiteness, blue light [%]	≥ 85	89	Manufacturer's method
pH value, aqueous suspension	7.0 – 8.5	8.4	ISO 787-9
Resistivity, aqueous extract [$\Omega \cdot m$]	≥ 100	—	ISO 787-14
Matter volatile at 105 °C [%]	≤ 0.5	0.21	ISO 787-2
Matter soluble in water [%]	≤ 0.5	0.1	ISO 787-3
Residue on sieve, 45 μm [%]	≤ 0.01	0.01	ISO 787-7
Iron, as Fe ₂ O ₃ [ppm]	≤ 45	10	XRF spectrometry
Inorganic surface treatment	Al, P, Mn	—	—
Organic surface treatment	Present	—	—

Specification values are the guaranteed limits for each lot. Typical values are indicative and do not form part of the specification. Lot-specific results are given in the Certificate of Analysis. Where no ISO method exists for a property, the manufacturer's own method is used and is available on request.

• Coating composition and elemental purity

Determined by SGS on a representative sample (report MCHCZ2600066-01F, January 2026):

Coating element	Content [%]	Trace element	Content [%]	Test method
Al ₂ O ₃	1.67	Fe ₂ O ₃	< 0.0003	XRF spectrometry
P ₂ O ₅	1.44	Cr ₂ O ₃	< 0.0003	XRF spectrometry
MnO ₂	0.322	V ₂ O ₅	< 0.0009	XRF spectrometry
Na ₂ O	0.193	ZnO	< 0.0006	XRF spectrometry
K ₂ O	0.115	SiO ₂	< 0.0010	XRF spectrometry

Iron, chromium and vanadium are the trace elements responsible for selective absorption in the short-wave visible range and hence for a yellow cast in the polymer. At the levels above they correspond to below 3, 3 and 9 ppm respectively.

• Identification

Standard classification	Colour Index	CAS No.	EINECS No.
ISO 591-1, type A2	Pigment White 6 (77891)	13463-67-7	236-675-5

• Recommended dosage

Application	Dosage [% by mass]	Remarks
Addition during polymerisation	0.2 – 0.5	Best dispersion and highest matting efficiency
Semi-dull / soft matte products	0.2 – 0.8	Balances translucency and matte texture
Full dull products	1.5 – 2.0	For a strong matte effect
Fiber masterbatch	30 – 40	High-concentration polyamide and polyester masterbatch

The dosage depends on the polymer system, the process and the matting level required. A laboratory trial under the customer's own conditions is recommended before first use.

• Packaging, storage and handling

- Packaging: 25.0 ± 0.1 kg woven bags with an inner plastic liner, moisture-sealed. Other packaging on request.
- Storage: keep in the original closed packaging in a dry, ventilated and cool store, away from acids, alkalis and oxidising agents; avoid moisture and stacking pressure.
- Transport: handle with care, protect from rain and direct sunlight; vehicles must be clean and dry.
- Handling: the product is a fine powder. Avoid dust formation, provide adequate ventilation, and wear a dust mask and safety glasses. Please consult the Safety Data Sheet before handling.

• Quality assurance

Raw materials are released by incoming batch testing; the process is monitored by a DCS control system; every lot undergoes full-item inspection before dispatch; retained samples are kept for six months to allow re-inspection and traceability.

All information is based on data obtained from the manufacturer or recognised technical sources and reflects our present knowledge. It does not constitute a warranty or guarantee of properties, nor of suitability for a particular purpose. The user remains responsible for testing the product under its own conditions and for compliance with all applicable laws and regulations.

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