

## KRONOS® 1171

### Titanium Dioxide E 171

#### Fields of Application

KRONOS 1171 titanium dioxide E 171 can be used wherever the food laws must be observed. It is suitable for food and pharmaceutical colouring as well as for colouring cosmetics.

The pigment can also be used as a white burning substance in tobacco, as colouring for cigarettes and cigarette filters as well as for the art print on cigars and for cigarette paper.

When using KRONOS 1171 titanium dioxide E 171 the legal requirements of each country must be strictly adhered to.

#### Typical Product Properties

KRONOS 1171 titanium dioxide E 171 is an untreated anatase sulphate pigment.

Property	Typical Value	Method
Appearance	White powder	Visual
Density, g/cm <sup>3</sup>	3.8	ISO 787/10
Particle size distribution (d <sub>50</sub> ), µm	0.26	Sedimentation
Oil absorption, g/100g	19 - 22	ISO 787/5
Surface area, m <sup>2</sup> /g	8 - 9	DIN 66 131

#### Product specification

These product properties are part of the continual production control and final product release testing.

Property	Specification	Method <small>(c.f. reverse for explanation)</small>
Brightness	97.0 - 97.8	DFC L*
Tone (white)	0.8 - 1.8	DFC b*
Sieve residue, %	≤ 0.02	SR 40
pH value	7.0 - 8.5	pH
TiO <sub>2</sub> content, %	≥ 99.0	ISO 591
Loss on drying, %	≤ 0.50	FEU
Loss on ignition, %	≤ 0.50	GLV
HCL soluble matter, %	≤ 0.50	ASM
Antimony, ppm	≤ 50	RFA
Arsenic, ppm	≤ 3	AAS
Barium, ppm	≤ 60	RFA
Cadmium, ppm	≤ 1	AAS
Lead, ppm	≤ 10	UV-AES
Chromium, ppm	≤ 100	UV-AES
Iron, ppm	≤ 200	UV-AES
Copper, ppm	≤ 100	UV-AES
Mercury, ppm	≤ 1	AAS
Zinc, ppm	≤ 50	RFA

#### Total contents:

#### Norm Classification

According to DIN EN ISO 591-1 this KRONOS titanium dioxide pigment belongs to the group A 1.

**Explanations of the Test Methods**

DFC L*	Brightness in white air-drying paint (CIELAB L*)
DFC b*	Tone in white air-drying paint (CIELAB b*)
SR 40	Sieve residue > 40 µm after dispersion in water in %
pH	pH of a 10 % aqueous suspension, ISO 787/9
ASM	Determination of the amount (%) of HCl soluble matter in the pigment
FEU	Moisture content (105° C) ex-works in % according to ISO 787/2
GLV	Loss on ignition at 800° C in %
AAS	Atomic absorption spectrometry
UV-AES	UV atomic emission spectrometry
RFA	x - ray fluorescence analysis (XRF)

**Explanation of the Particle Size Distribution**

The particle size  $d_{50}$  is the median value of the cumulative distribution.

Remarks:

KRONOS 1171 is regularly tested by an independent institute in accordance with the guidelines of

Zusatzstoff-Verkehrs-Verordnung  
 European Pharmacopeia (Eur. Ph.)  
 US Pharmacopeia (USP)  
 British Pharmacopoeia  
 FDA (§ 73.575)  
 EC - Guideline  
 Japanese Pharmacopeia

KRONOS INTERNATIONAL, Inc.  
 Quality Management

Issue \_\_\_\_\_

Date

Signature \_\_\_\_\_

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