

APPLICATION SHEET

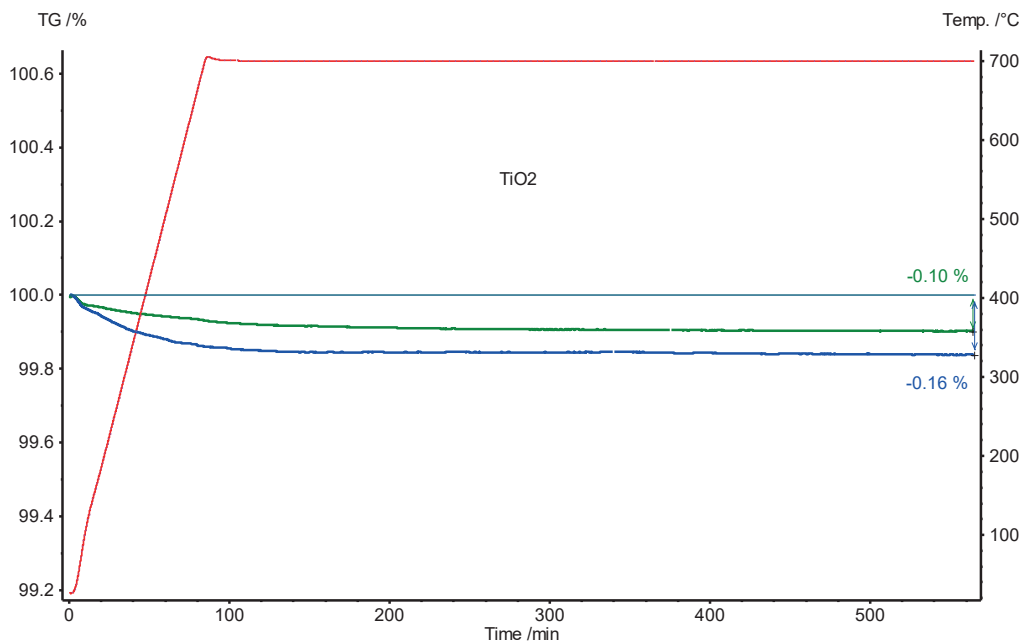
Ceramics · Chemicals
STA 449 F1 Jupiter®

Titanium Oxide (TiO₂)

Introduction

Titanium dioxide is the most widely used white pigment because of its brightness and very high refractive index. When deposited as a thin film, its refractive index and color make it an excellent reflective optical coating for dielectric mirrors. TiO₂ is also an effective opacifier in powder form,

where it is employed as a pigment to provide whiteness and opacity to products such as paints, coatings, plastics, papers, inks, foods, and most toothpaste. In cosmetic and skin care products, titanium dioxide is used both as a pigment and thickener, and in almost every sun block with a physical blocker, titanium dioxide is found



Test Conditions

Temperature range: RT ... 700°C
Heating/cooling rates: 8 K/min
Atmosphere: N₂/H₂ (95:5) at 60 ml/minc
Sample mass: 200 mg
Crucible: Alumina
Sensor: TGA, type S

Test Results

The TiO₂ samples were relatively pure as can be concluded from the detection of the small mass loss of both samples. The difference in the mass loss of the samples is most probably due to differences in surface water and/or titanium hydroxides. It can also be gathered from the TGA curves that the drying process at 700°C takes about 3 hours.