



Ciba

# Ciba<sup>®</sup> Irgacure<sup>®</sup> 784

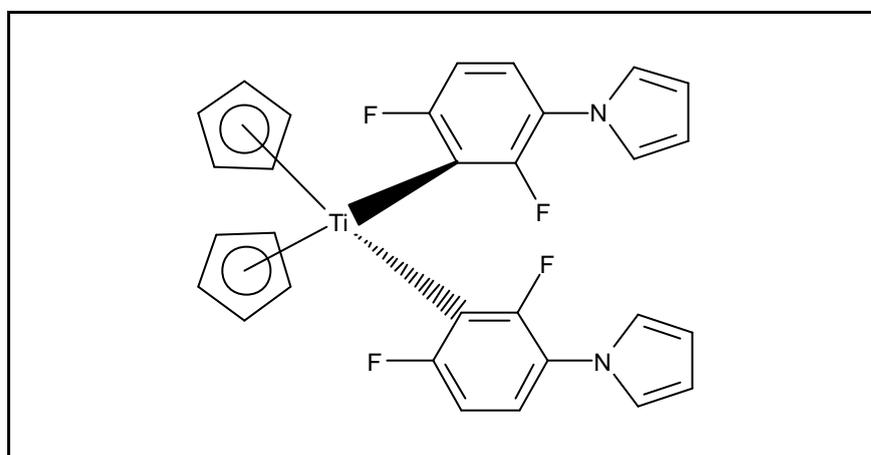
## Photoinitiator

### General

IRGACURE 784 is an extremely reactive, orange colored solid photoinitiator for radical polymerisation of unsaturated resins upon exposure to visible light (daylight) or UV light. It is especially suited for the curing of photopolymers for imaging or information storage applications.

Its self-color as well as its sensitivity to daylight and oxygen limits the use of IRGACURE 784 to specific applications.

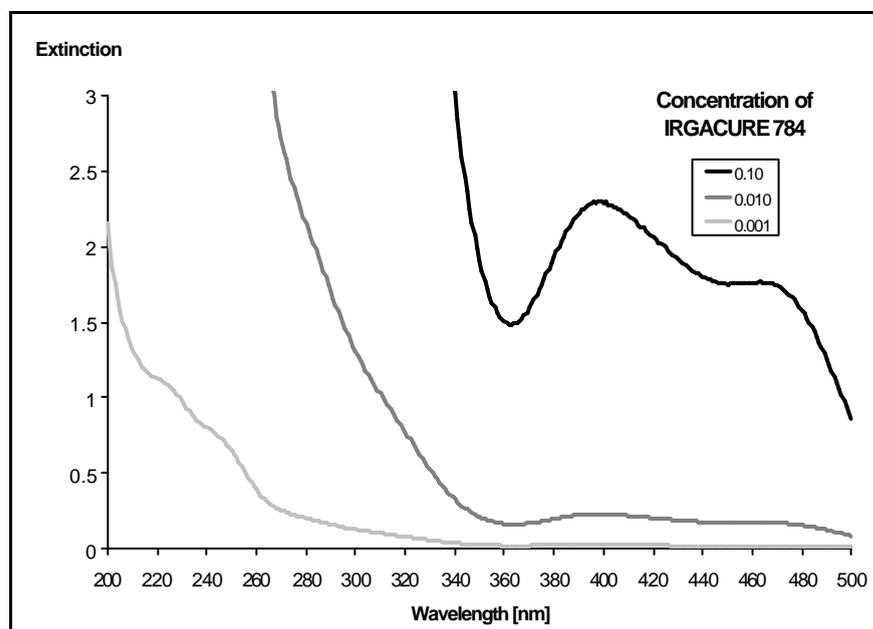
### Chemical Structure



Bis(eta-5-2,4-cyclopentadien-1-yl)-bis(2,6-difluoro-3-(1H-pyrrol-1-yl)-phenyl) titanium

Molecular Weight: 534.4

### Absorption Spectrum (% in Acetonitrile)





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### Physical Properties

Appearance: yellow to orange powder

Melting Range: 160-170°C

Solubility at 20°C (g/100 g solution):

acetone	~ 30 *
hexanedioldiacrylate (HDDA)	10
methylethylketone	~ 30 *
toluene	10
trimethylolpropanetriacrylate (TMPTA)	5

\* please refer to information in chapter Safety and Handling

### Applications

IRGACURE 784 may be used, after adequate testing, for UV and/or visible light curable formulations based on chemically unsaturated systems - such as those based on a prepolymer - e.g. acrylates - in combination with mono- and multifunctional monomers as reactive thinners.

Best curing performance of this product can only be achieved in the absence of oxygen.

Its unique absorbance properties together with its outstanding reactivity make IRGACURE 784 especially suited for use in photopolymers, e.g. resists, printing plates and other information storage devices such as optical layers, holograms, laser direct imaging, stereolithography. Curing can be performed either using UV light, visible light (blue-green part of the spectrum) or even light from suitable laser devices, e.g. Ar-Laser (488nm) or FD-Nd/YAG-Laser (532nm). Best performance is obtained if oxygen is excluded from the resin system during curing.

Applications in coatings, inks or adhesives may be of further interest.

The amount of IRGACURE 784 required for optimum performance should be determined in trials covering a concentration range.

### Recommended concentrations :

Photopolymers for imaging  
or information storage applications:

**0.3 - 10.0 % IRGACURE 784**

Other applications:

**0.5 - 5.0 % IRGACURE 784**

### Safety and Handling

IRGACURE 784 should be handled in accordance with good industrial practice. Detailed information is provided in the Safety Data Sheet.



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## **Photoinitiator**

For more detailed information, especially with respect to recommended conditions during warehousing and transportation, please refer to the Safety Data Sheet of IRGACURE 784.

IRGACURE 784 is sensitive to visible light and any exposure to sunlight should be avoided. Opened drums should be closed after use to protect the product against light.

When IRGACURE 784 is dissolved in a solvent or a formulation it is extremely sensitive to daylight and light from standard fluorescence bulbs. Any open manipulation of such systems should be carried out either in the dark or under light provided by suitable red light sources.

Upon storage in solutions with presence of donor molecules (e.g. ketones, amines, cyanates and others), a slow ligand exchange reaction may occur leading to decomposition into insoluble material. The insolubles exhibit low or no reactivity as photoinitiator.

### **Important Notice**

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