

General Introduction

Chivacure® TPO-W is a highly efficient phosphine oxide photoinitiator suitable for use with LED lamps and V bulbs. Due to its strong UV absorption band between 360 nm and 420 nm superimposed onto the TiO₂ white window, TPO-W is ideal for use in TiO₂-based white color UV systems. Its photobleaching and bottom-to-top curing behavior ensures its excellent through cure performance. TPO advantages also include the absence of odor and yellowing after curing. TPO-W is prepared by an improved Chitec-developed process which eliminates the byproduct formation of chloroethane, an ozone-depletion agent. This new process gives TPO-W properties superior to competing products in that there is no odor or caking caused by residual volatiles.

Applications

Chivacure® TPO-W is the best available photoinitiator for LED, white, and thick UV systems. The standard dosage is 1% to 10% by weight based on the total weight of the UV system, depending on thickness, pigment loading, and photospeed.

Some recommended applications for Chivacure® TPO are:

- Inkjet printing
- 3D printing
- White UV inks
- Daylight curing
- Adhesive curing

Color comparison to general TPO



TPO-W

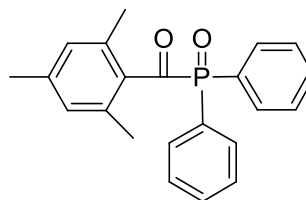
TPO

Solubility (g in 100ml solvent / monomer @25 °C)

Acetone	: 50
Butyl acetate	: 30
Dichloromethane	: 60
MEK	: 40
Styrene	: 35
TMPTA	: 15
Water	: Nil

Chemical Information

Structure



CAS Name	: 2,4,6-Trimethylbenzoyl-diphenylphosphine oxide
CAS No.	: 75980-60-8
Molecular Formula	: C ₂₂ H ₂₁ O ₂ P
Molecular Weight	: 384.37

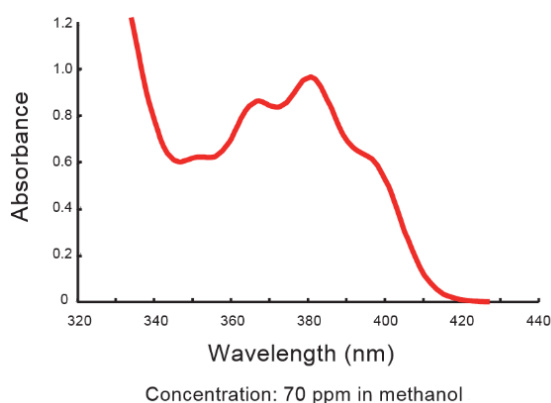
Physical Data

Appearance	: Light yellow crystalline powder
Specific gravity	: 1.136 @20 °C
Bulk density	: 0.76 g/mL
Vapor pressure	: < 0.01 Pa @20 °C

Specification

Appearance	: Light yellow crystalline powder
Assay (HPLC)	: 99% min.
Melting point	: 87 - 94 °C
Acid value (mg KOH/g)	: 1 max.
Color (Hazen)	: 100 max.
Clarity of solution	: Clear

UV Spectrum



Storage

Must be stored in closed containers in dry and dark conditions.

Packaging

20 kg carton box
600 kg per pallet