

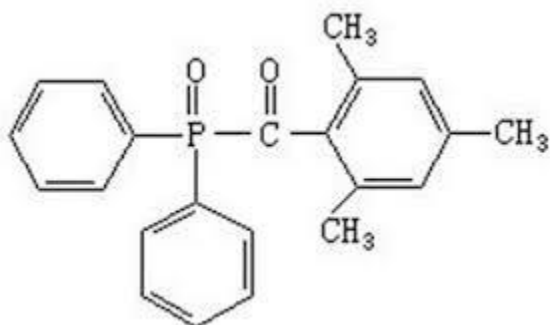
Technical Data Sheet

Product Code: ACH-TPO

Chemical Name: 2,4,6-trimethylbenzoyldiphenylphosphine oxide

CAS No.: 75980-60-8

Chemical Structure:



General Information and Specifications:

ACH-TPO is an extremely effective Type 1 homolytic photoinitiator, which absorbs UV light at longer wavelength, thus making it suitable for curing white, matting, and pigmented formulations.

ACH-TPO undergoes a photo-bleaching reaction that allows the effective curing of thick films. ACH-TPO is a solid photoinitiator for pigmented UV curable coatings used in UV stabilized topcoats for outdoor use and printing inks, especially opaque white.

Key Features and Benefits:

- Very good through curing
- Low yellowing
- Photobleaching



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Properties:

Typical Characteristics;	Appearance	yellowish powder
	Melting point	87 – 94°C (189 - 199°F)
	Assay	97% min
	Acidity	4.0 mg KOH/g max
	Loss on drying	0.5% w/w max
	Specific gravity	1.22

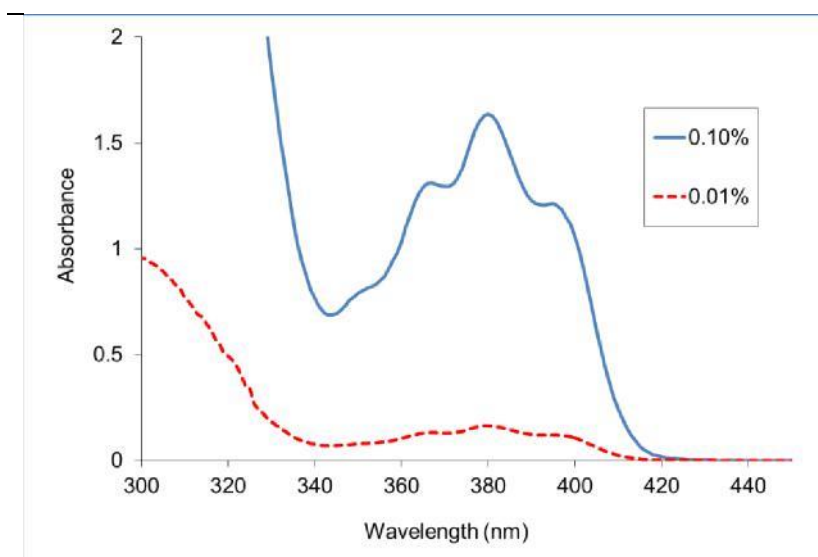
Solubility:

Can be combined with solvents common to the inks and coatings industry such as acetone or n-butyl acetate, or monomers such as hexanediol diacrylate, trimethylolpropane triacrylate, or tripropyleneglycol diacrylate to formulate concentrated photoinitiator solutions.

<u>Solubility at 23°C (73°F) % by weight</u>	
n-butyl acetate	25 %
hexanediol diacrylate	20 %
tripropyleneglycol diacrylate	15 %

These typical values should not be interpreted as specifications.

Absorption Spectrum in Ethanol:



Applications:

ACH-TPO is a photoinitiator for the UV curing of unsaturated polyesters and resins containing acrylic ester groups. Because of its absorption behavior in the long-wave range of the UV spectrum, it is used to cure pigmented UV curable coatings, as well as UV stabilized coatings.

ACH-TPO is also widely used because it can photobleach resulting in low yellowing coatings, which is particularly needed for white pigmented coatings and printing inks, such as silk-screen printing.

ACH-TPO is recommended for applications such as:

- Opaque white printing inks for flexographic, gravure, lithographic, screen, or digital applications
- Clear overprint varnishes (in combination with an alpha hydroxy ketone)
- UV curing of coatings for can/coil, general industrial, floor, furniture, millwork, or plastic component applications.

ACH-TPO is added to pigmented coatings formulations at a rate of 0.5 – 3.0% (expressed in terms of the polymerizable fraction).

In formulations containing UV resins with acrylic ester groups, atmospheric oxygen has a strong inhibiting effect on the curing of the film's surface. Surface curing can be promoted by adding other initiators.



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Because of its absorbance of long-wave UV light, ACH-TPO itself, as well as coatings or surfaces containing it, is sensitive to daylight. In storage, as well as in production, light with wavelengths of less than 500 nm should be excluded, for example lamps and windows covered with yellow films.

ACH-TPO should not be used for coatings of articles intended to come into contact with food or are to be used in the cosmetic or medical fields.

Storage:

Properly stored and protected from light, an unopened original container of ACH-TPO stored in temperature below 30°C(86°F) should have a shelf life of at least 24 months.

Packages:

25 Kg material should be packed inside a clear plastic bag, then placed inside a black plastic bag. Both bags are zip tied closed. Finally double bagged material should be placed inside a thick cardboard box and shipped to customers.