Ciba Specialty Chemicals

Coating Effects Segment

Ciba

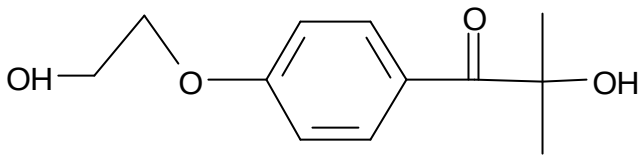
Ciba® IRGACURE® 2959

Photoinitiator

General

IRGACURE 2959 is a highly efficient non-yellowing radical photoinitiator for the UV curing of systems comprising of unsaturated monomers and prepolymers. It is especially suited where low odor is required and for use in water-borne systems based on acrylate or unsaturated polyester resins. The active hydroxy group can be reacted with suitable functionalized unsaturated resins.

Chemical Structure

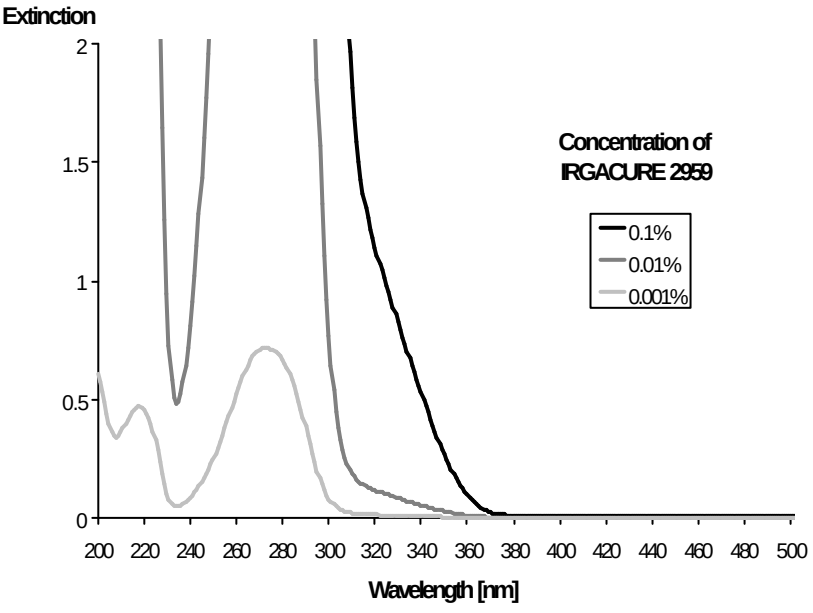


1-[4-(2-Hydroxyethoxy)-phenyl]-2-hydroxy-2-methyl-1-propane-1-one

Molecular weight: 224.3

Absorption Spectrum

(% in Acetonitrile)



Physical Properties

Appearance: off-white powder

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Odor: only very slight odor

Melting point: 86.5 - 89.5°C

Flash point: >100°C

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

acetone	15
butylacetate	3
ethylacetate	5
ethanol	10
methanol	> 50
toluene	< 1
hexanedioldiacrylate (HDDA)	< 1
trimethylolpropanetriacrylate (TPPTA)	< 1
water	~ 1

Application

IRGACURE 2959 may be used after adequate testing in UV curable formulations on substrates like wood, metal, plastic and paper. The hydroxy functional group enhances the compatibility of IRGACURE 2959 in water-borne coating formulations.

IRGACURE 2959 demonstrates low volatility and low odor as a pure substance as well as in cured films, compared to other commercially available photoinitiators.

A further important feature of IRGACURE 2959 is the potential to react the hydroxy functional group to form a grafted photoinitiator onto a resin backbone, resulting in system with minimum extractability of the photoinitiator.

Due to its unique secondary properties IRGACURE 2959 is especially recommended when high temperatures and air circulation are required for water evaporation prior to UV curing of the coating and for formulations where minimum residual odor is required, e.g. in printing onto food packaging.

The amount of IRGACURE 2959 required for optimum performance should be determined in trials covering a concentration range.

Recommended concentrations :
(concentrations are based on resin)

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2 - 5 %	**IRGACURE 2959**

Safety and Handling

IRGACURE 2959 should be handled in accordance with good industrial practice. Detailed information is provided in the Safety Data Sheet.

IRGACURE 2959 is sensitive to visible light and any exposure to sunlight should be avoided. Opened packagings should be closed after use to protect the product against light.

Important Notice

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