Ciba Specialty Chemicals

Coating Effects Segment

Ciba

IRGACURE® 127

Photoinitiator

General

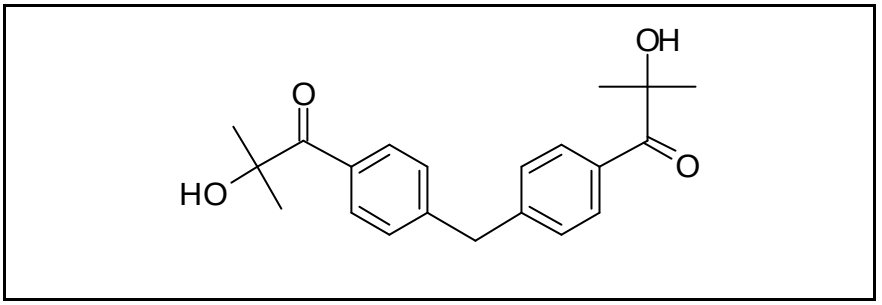
IRGACURE® 127 is a highly efficient UV curing additive which is used to initiate the photopolymerisation of reactive prepolymers - e.g. acrylates - in combination with mono- or multifunctional monomers.

IRGACURE® 127 is completely aligned with market requirements in terms of productivity and emission. This new photo-initiator is remarkable by its:

- excellent reactivity i.e. superiority over conventional a-Hydroxyketones like IRGACURE® 184 or DAROCUR® 1173;
- low sensitivity to oxygen inhibition;
- low emission and odor after curing.

IRGACURE® 127 is especially suitable for all types of pigmented UV-inks (offset, screen, flexo and Ink Jet) and Clear coatings, in particular in thin coatings like overprint varnishes but also in a variety of coating applications.

Chemical Structure



2-Hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-benzyl]-phenyl}-2-methyl-propan-1-one

Molecular weight: 340.4 CAS-No. 474510-57-1

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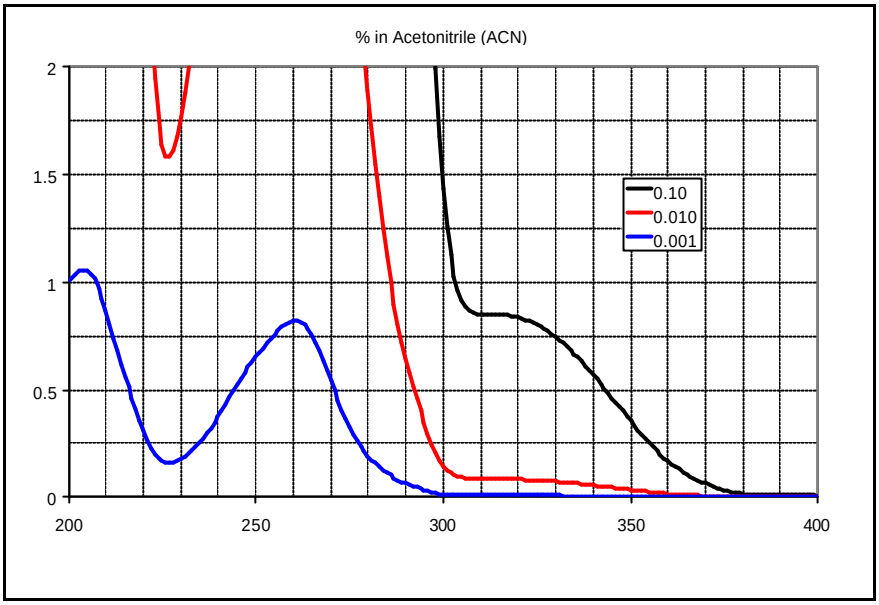
Absorption Spectrum
(% in Acetonitrile)



Physical Properties

Appearance:	off-white powder
Melting point:	82-90°C (strongly dependent on measurement conditions)

Solubility at 22°C (g/100 g solution):

DAROCUR 1173	40 %
tripropyleneglycol diacrylate (TPGDA)	15 %
TMPTA	15 %
EBECRYL 160	15 %
OTA 480	>15 %
DPHA	5 %

Application

IRGACURE® 127 may be used after adequate testing alone or in combination with suitable co-initiators, such as IRGACURE® 379, IRGACURE® 819 for UV curable inks and in coating formulations for applications on paper, wood, metal and plastic materials. Its red-shifted absorption spectrum makes it especially suitable for UV curable inks and in general semi opaque systems.

In these applications it delivers properties like very high cure speed and low odor. In UV curable inks it gives (in combination with other photoinitiators) outstanding surface cure properties.

Low sensitivity to oxygen inhibition associated with reduced emission are of particular interest for overprint varnishes and for top coats for wood parquets.

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In UV curable cationic inks and coatings the use of IRGACURE® 127 as a co-initiator together with e.g. IRGACURE® 250 has been demonstrated to result in an exceptionally high-performance formulation.

The amount of IRGACURE® 127 required for optimum performance should be determined in trials covering a concentration range.

Recommended concentrations:

clears	**1 –6 %**	**IRGACURE® 127**
inks (free radical systems)	**2 – 5 %**	**IRGACURE® 127 combined with other PIs like e.g. IRGACURE® 379 or IRGACURE® 819.**
Inks (cationic systems)	**0,5 – 2 %**	**IRGACURE® 127 combined with other PI such as IRGACURE® 250**

Safety and Handling

IRGACURE® 127 should be handled in accordance with good industrial practice. Detailed information is provided in the Safety Data Sheet.

IRGACURE® 127 is slightly sensitive to visible light and exposure to sunlight should be avoided. Opened bags should be closed immediately after use to protect the product against light.

Important Notice

IMPORTANT: The following supersedes Buyer's documents. SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled or lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.

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IRGACURE® 127

Photoinitiator