Hampford Research INC
Handcrafted Solutions For A High-Tech World

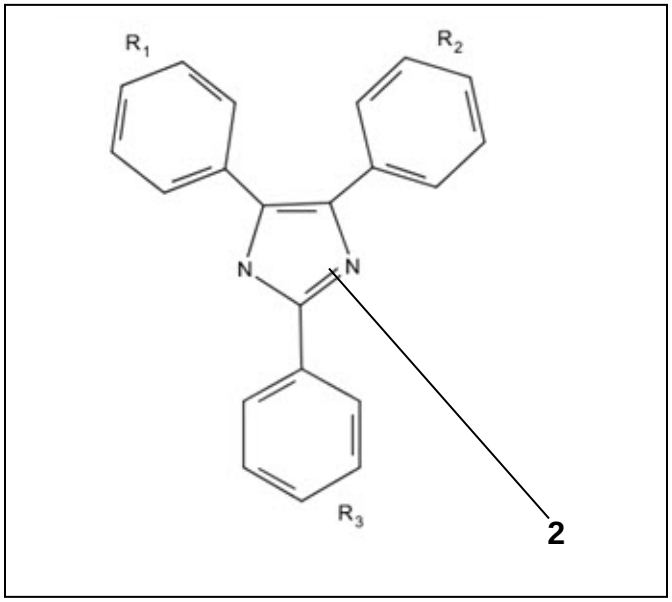
LEDCUR 110
Free Radical Photoinitiator
FP 5385

General

For over 30 years, Hampford Research Inc. has manufactured free radical photoinitiators based on the hexaaryl-bisimidazolyl (HABI) molecule. Through careful modification of the substituents on the aryl groups, HRI has been able to significantly improve the performance at 360 nm. These innovative new compounds will still produce stable lophyl radicals and offer resistance to oxygen inhibition that HABI's are known for.

LEDCUR 110 is the highest performing of all the photoinitiators in the line. Its outstanding photo-speed, solubility, and competitive use cost, makes LEDCUR 110 ideal for most LED applications.

HABI structure

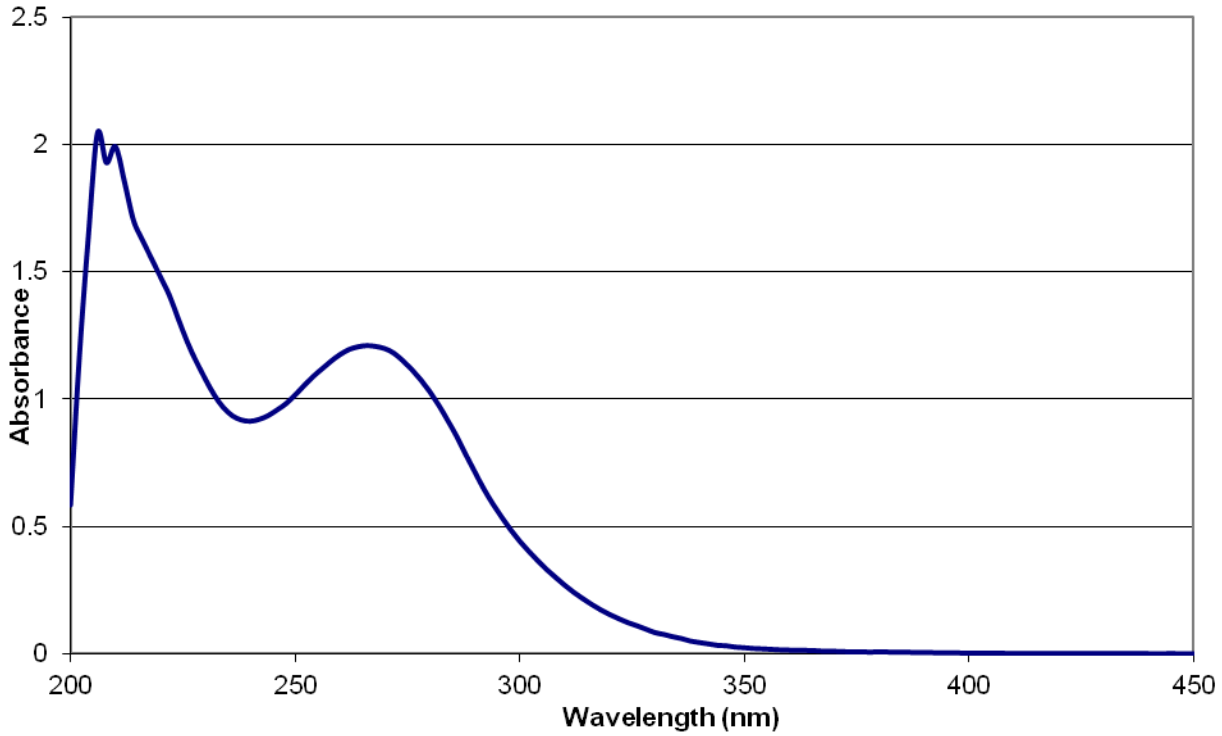


Phone: (203) 375-1137
Hampford Research, Inc.
54 Veterans Boulevard
Stratford, CT 06615
Fax: (203) 386-9754

Product information

PRODUCT TYPE:	Free radical photoinitiator
PRODUCT NAME:	LEDCUR 110
CAS NO.	29864-18-4
APPLICATIONS:	Photoresists, Coatings, Graphic Arts Imaging
SHELF LIFE:	1 year when stored indoors at 25 (+/- 5) deg C

Absorption Spectrum



Packaging: 25 kg fiber drum (16" dia x 27.5" h)

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Usage recommendations:

All HABI photoinitiators operate via a Norrish II type reaction mechanism, meaning they must be combined with a suitable co-initiator in order attain complete photo-polymerization. The two most commonly used products are n-Phenyl Glycine (FP5360) or 2-MBO (FP5260). NPG is the more active of the two materials, and should be used for applications requiring fast cure speed or a high degree of polymerization. 2-MBO offers improved resistance to oxygen inhibition and imparts very little color, making it ideal for clear coating applications. One or both of these materials can be used in most formulations, with a typical starting point being 2 parts photoinitiator to one part co-initiator.

In certain, highly active systems, autocatalytic or dark reactions can occur. This is especially true when NPG alone is used as a co-initiator. To prevent these type occurrences, inhibitors such as UVTS -52 (FP 5445) should be incorporated into the formulation, typically between 0.01-0.1% by weight.

The high molecular weight as well as the low polarity of the HABI molecule makes it ideal for applications where low migration characteristics are paramount. This can, however, make HABI difficult to solubilize in high viscosity, polar solutions. This problem can be alleviated by predissolving the HABI in a suitable solvent (i.e. methylene chloride, THF or acetone), adding the solution to the monomer blend and allowing the residual solvent to evaporate off.

Alternately, HABI dissolution directly into monomer/binder blends can be facilitated through the application of heat. The monomer blend should be gently heated to approximately 60 degrees C, adding the HABI directly, with uniform agitation. Co-initiators should **not** be added when the material is being heated, as thermal induced polymerization can result.

Safety and Handling

HABI should be handled in accordance with good industrial practice. Detailed information is provided in the SDS.

HABI is sensitive to visible light and any exposure to sunlight should be avoided.

NOTE: Intellectual property issues cover the use of this material in select applications.

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