

Introduction

R-gen® 919 is a novel photoinitiator introduced in 2017 and is the only liquid photoinitiator commercially available for black UV systems. It completely solves the extralow solubility issue of solid, p-morpholinoacetophenone based photoinitiator (Chivacure® 169) which limits the dosage and selection of monomers and oligomers during formulation. The liquid nature of this product speeds up the preparation of end products such as UV inks which is crucial for heat sensitive systems.

The photospeed of R-gen® 919 is as high as that of p-morpholinoacetophenone under both arc and LED lamps, and its odorless after cure is another advantage. Furthermore, the liquid nature of R-gen® 919 allows it to function as a handy solvent for preparing photoinitiator cocktails.

*This product is protected by Taiwan patent I564276B and its associated patent family.

Recommended applications

- Black UV inks with extra photospeed not possible with Chivacure® 169.
- Where UV systems are heat- and grinding- sensitive.
- UV systems where premature precipitation cannot be tolerated as with UV ink for inkjets.
- UV systems that must be odor-free.
- UV systems where CMR 1(b) material cannot be used.

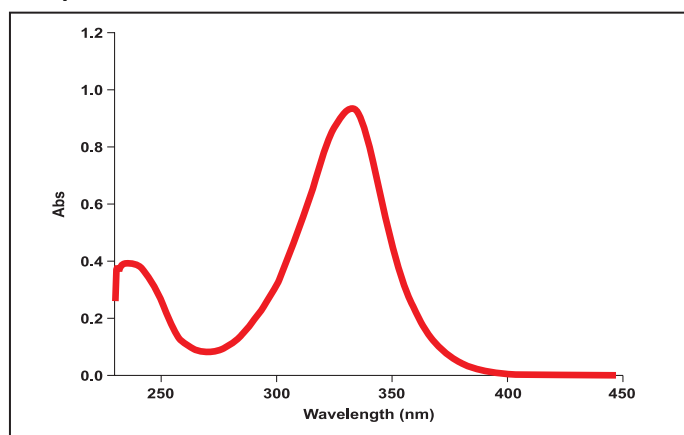
Packaging

20 kg net / Drum

Regulatory status

TSCA : Pending
REACH : Under preparation

UV spectrum

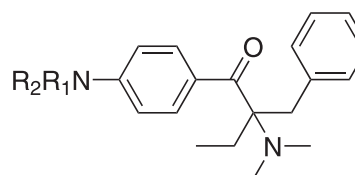


Photospeed under UV Lamp (D-bulb)

Recipe	A	B
Oligomer 6325-100 (Eternal)	50.0 g	50.0 g
Monomer EM2411 (Eternal)	50.0 g	50.0 g
Carbon Black (CABOT)	10.0 g	10.0 g
R-gen® 919	6.0 g	
Chivacure® 169		6.0 g
Photospeed	120.0 m/min	120.0 m/min

Chemical Information

Structure



Chemical name

p-morpholinoacetophenone type photoinitiator

CAS No.

Proprietary

Physical Data

Appearance	: Brownish viscous liquid
Odor	: Slight ester smell
Boiling point	: 257.8 °C
Viscosity	: 210,000 cps at 20 °C
Density	: 1.088 g/cm³ at 20 °C
Solubility	
Most acrylic resins	: completely miscible
Water	: 3.37 x10 ⁻³ g/L at 20 °C

Specification

Appearance	: Brownish viscous liquid
Clarity	: Clear
Active content	: 90% min.
Volatiles	: 0.5% max.

Photospeed under LED

Substrate	: Coated paper
Distance to light source	: 1.0 cm
Dry film thickness	: 25.2 µm

Recipe	A	B	C	D
Oligomer 6325-100 (Eternal)	50.0 g	50.0 g	50.0 g	50.0 g
Monomer EM2411 (Eternal)	50.0 g	50.0 g	50.0 g	50.0 g
Carbon Black (CABOT)	10.0 g	10.0 g	10.0 g	10.0 g
R-gen® 919	6.0 g		6.0 g	
Chivacure® TPO		6.0 g		6.0 g
Chivacure® DETX	2.0 g	2.0 g	2.0 g	2.0 g
Chivacure® 115	6.0 g	6.0 g		
Chivacure® EPD			4.0 g	4.0 g
Chivacure® EMK	0.5 g	0.5 g	0.5 g	0.5 g
LED 365nm (4W)				
10 m/min	v/v	v/v	Δ/v	Δ/v
20 m/min	x/v	x/x	x/Δ	x/x
LED 395nm (4W)				
10 m/min	x/v	v/v	x/v	x/v
20 m/min	x/Δ	x/x	x/Δ	x/x
LED 395nm (8W)				
10 m/min	v/v	v/v	v/v	v/v
20 m/min	Δ/v	Δ/v	x/v	x/v

x: not cured Δ: almost cured v: fully cured