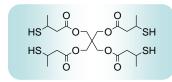
# KarenzMT<sup>TM</sup> PE1 — Photo Curing Additive, Epoxy Hardener—

- Multifunctional secondary thiol structure
- · Possible to enhance the performance in many applications : Adhesive, Coating, etc.

Photo curing additives: Enhancing UV/LED sensitivity. Better flexibility.

Epoxy hardener: Low temperature/fast curing, Better flexibility.

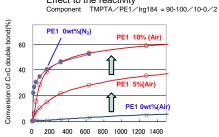


Fine Chemicals Group Specialty Chemicals Department **Functional Chemicals Division** SHOWA DENKO K.K.

KarenzHP URL http://www.karenz.jp/

### Improvement of Reaction

Saving energy / Enhancement of Productivity



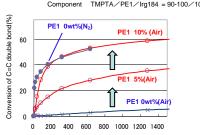
## Mobile phone Photo resists materials



Other applications Adhesive

- Plastic coating
- Paint
- Inkiet Ink
- •FRP

# Effect to the reactivity



Exposure dose(mJ/cm2)

### Improvement of curing of high contents carbon black ink

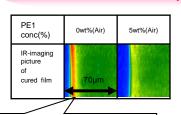
Enhancement of light blocking / Enhancement of Productivity

	Exposure till tack free
No additives	0.2J/cm <sup>2</sup>
PE1 5 phr	0.06J/cm <sup>2</sup>

Base materials : Normal paper Film thickness : 10µm Monomer/Resin 75 phr Carbon black : 20 phr

Initiator : Irgacure907 5 phr





Un cured own to Oxygen

inhibition

LCD materials

# Improvement of surface curing (IR-imaging)

Enhancement of Productivity / Simplify of Production facilities

PE1/U-15HA/TMPTA/Irg184=0/48/48/5 PE1/U-15HA/TMPTA/Irg184=5/45/45/5 Exposure dose 1,000mJ/cm<sup>2</sup>

Improvement was observed by addition of KarenzMT™ PE1

### Stress relaxation

#### Prevention of Crack / Detachment

- Stress in UV curing film can be relaxed by addition of KarenzMT™ PE1 ·Dimensional accuracy can be also improved
- KarenzMT<sup>™</sup> PE1 KarenzMT™ PE1 was added(20wt%)
- Component
- PE1/TMPTA/U-15HA/lrg184
- =20/37/37/5 · Base Plate
- Exposure dose 500mJ/cm<sup>2</sup>(N<sub>2</sub>)

### Transparency of film

Enhancement of Transparency

Transparency of UV curing film can be enhanced by addition of KarenzMT™ PE1. No decrease of transparency was observed after water resistance test



Component PE1/TMPTA/Irg184=10/90/2 Exposure dose 500mJ/cm<sup>2</sup> Photo was taken through each cured film



The information contained herein is based on the data considered true and accurate. However, Showa Denko K.K. accepts no responsibility for any liability or risk which may result from the handling and use of products or for infringement of any patent.