



Press Release

April 15, 2008

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ADEKA Develops an Eco-friendly Photocation Polymerization Initiator

ADEKA CORPORATION (President and COO: Kunihiko Sakurai) has developed an eco-friendly photocation polymerization initiator (ADEKA OPTOMER SP-300).

In conventional practice, photocation polymerization (light curing) has been initiated by using onium salt, which is based on a metal ion (antimony acid hexafluoride ion) as an anion component, because of its sensitive curability under light and high stability with time. With recent growth in safety awareness throughout the world, however, the public was waiting for the arrival of an anion component that does not use antimony, which has a possibility of toxicity and oncogenicity.

The boron-based onium salt photocation polymerization initiator just developed by ADEKA is comparable to conventional versions in sensitive curability and stability with time but is highly safe because it uses no toxic metal.

A photocation polymerization (light curing) initiator is used to polymerize (cure) a prepolymer of epoxy resin or oxetane resin by using an acid generated by photolysis. Prepolymer is given about 1% photocation polymerization initiator and irradiated with ultraviolet rays to cure epoxy resin.

Epoxy resin is generally cured by adding a phenol-based curing agent and heating (at about 200°C). On the other hand, curing by ultraviolet irradiation can be used for heat-sensitive materials (backing materials) as well, so that it sees growing demand in *photocoating*, *photoadhesion*, *photoformation*, and other applications. More specifically, it is expected to be applied to hard coating on optical film and ID cards and other materials, adhesion of mobile phone parts and camera lenses, and various other kinds of precision equipment.

This material has yet another feature. Unlike thermosetting agents, the material may be made quick-drying or delayed depending on the use. It can therefore be used in a wide range of areas, including adhesion of lenses, light-emitting diodes (LEDs), semiconductor lasers (LDs), and other optical devices, tape automated bonding (TAB) connector stickers, and other electronic parts.

The material can also be expected to be reduced in curing time, resulting in higher production efficiency, and can also enjoy a lower energy demand required for curing than thermosetting, thereby offering reductions in carbon dioxide emissions and other environmental advantages.

ADEKA has as its target to achieve 1 billion yen in sales per year five years later.

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