

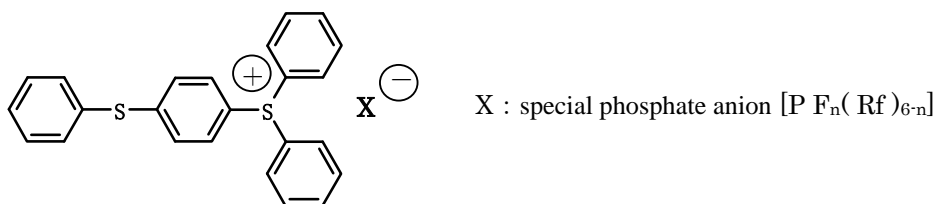
CPI-200K & CPI-210S

-Cationic Photo Initiator (**Antimony-Free** Type)-

SAN-APRO LTD.

CPI-200K and CPI-210S are newly developed cationic photo-initiators (photo acid generators) of triarylsulfonium salt with special phosphate anion , as the chemical structure shown below . (patent pending)

New Products show the same level of photo curing ability as antimonate type photo-initiators . These are suited for photo curing either clear or pigmented formulations containing cycloaliphatic epoxides and other cationically polymerizable materials .



Major Properties

Product name	CPI-200K	CPI-210S
Appearance	Slightly yellow to yellow liquid	White powder
Solid Content(%)	ca.50(W/W)	100%
Solvent	propylene carbonate	--

Features

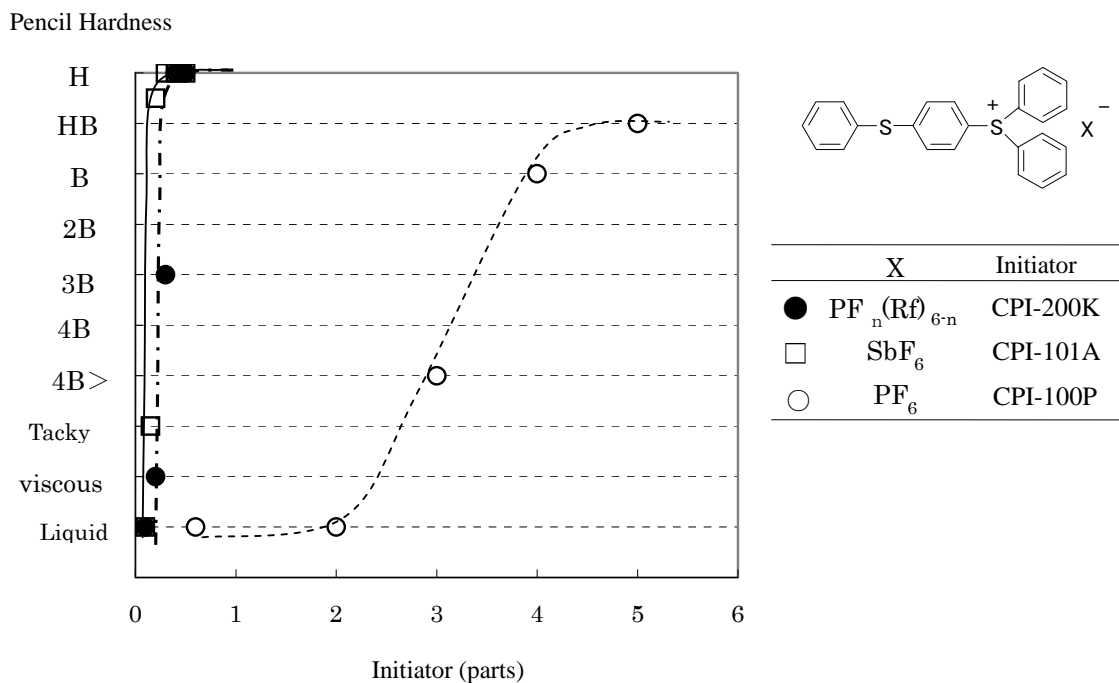
1. According to our test , photo curing ability of a cationically polymerizable formulation comprising CPI-200K is better than that of conventional triarylsulfonium salt with PF₆ anion (CPI-100P) , and comparable to that of the conventional triarylsulfonium salt with SbF₆ anion (CPI-101A) .
2. Solubility of CPI-200K is much better than CPI-100P and CPI-101A in cationically polymerizable monomers and organic solvents.
3. Formulation comprising CPI-200K is thermally more stable than CPI-101A and almost same as CPI-100P.

Performance

(1) Photo curing Ability

Photo curing ability of CPI-200K is compared with CPI-101A and CPI-100P. Performance of CPI-200K is almost the same as CPI-101A with SbF_6 anion and much better than CPI-100P with PF_6 anion.

Figure-1. Amount of Initiator and Pencil Hardness of UV-cured Film.



[Test Method]

To 100parts of UVR-6110, cycloaliphatic epoxy resin supplied by DOW Chemical Co., a specified amount of the initiator solution (50% propylene carbonate solution) was added. The mixture was UV-cured by the following condition. The pencil hardness of the cured film was measured 30 minutes after UV irradiation.

[Condition of UV-Curing]

Apparatus : belt conveyer-type UV Irradiation Apparatus (Eye Graphic Co.,Ltd)

UV Lamp : metal-halide (120W/cm). Irradiation distance : 18cm

Conveyer speed : 4m/min. × 1pass

Coating thickness : ca.40 μm on PET film of 80 μm thickness

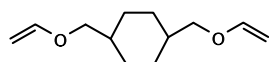
(2) Solubility

Solubility of CPI-200K in cationically polymerizable monomers and organic solvents is much better than that of CPI-101A and CPI-100P .

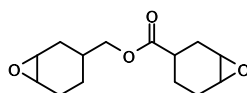
Table-1. Solubility in cationically polymerizable monomers and organic solvents

Initiator	Monomers		Organic Solvents				
	CHVE	UVR-6110	Toluene	IPA	AcOEt	MIBK	THF
CPI-200K	△	○	○	○	○	○	○
CPI-101A	×	○	×	×	○	○	○
CPI-100P	×	○	×	×	○	○	○

Note)



CHVE



UVR-6110 :DOW Chemical Co.,Ltd

[Test Method]

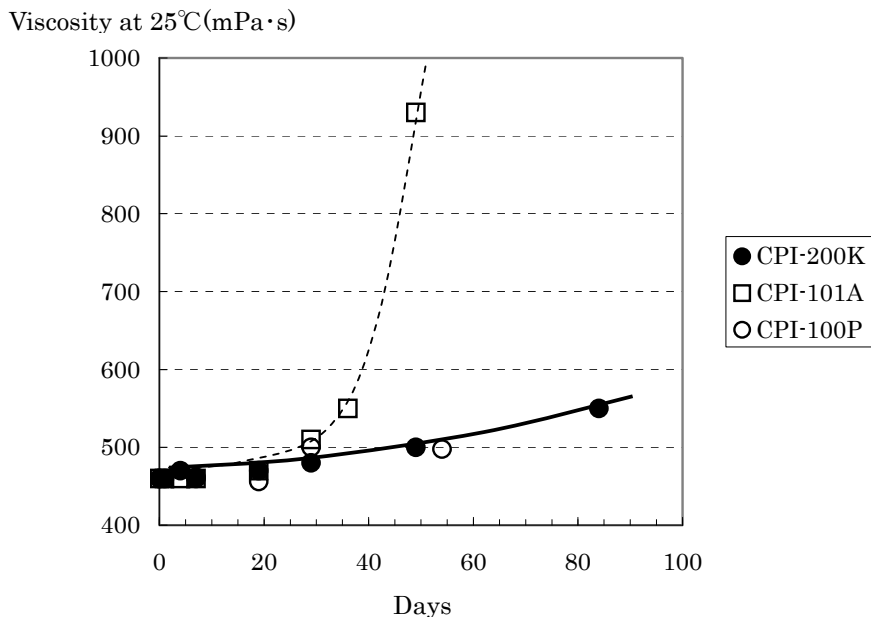
To 100 parts of monomers or organic solvents, 20 parts of 50% propylene carbonate solutions of photo-initiators were added at room temperature and the solubility was judged from the appearance of the mixtures.

○ : Clear (soluble) △ : Slightly turbid × : Turbid or separation of initiator

(3) Storage Stability

Epoxy resins containing CPI-200K is more storage-stable than those containing CPI-101A and almost the same as CPI-100P.

Figure-2.Viscosity Change of Epoxy Resin Containing Initiators at 80°C



[Test Method]

The following formulations were kept at 80°C and viscosities of the solutions were measured periodically at 25°C.

[Formulation]

UVR-6110 : 100 parts

Initiators : 5 parts of CPI-100P, 3 parts of CPI-200K or CPI-101A

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