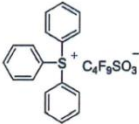
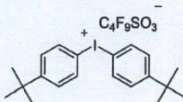
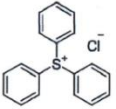
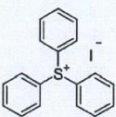
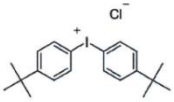
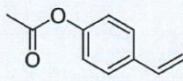
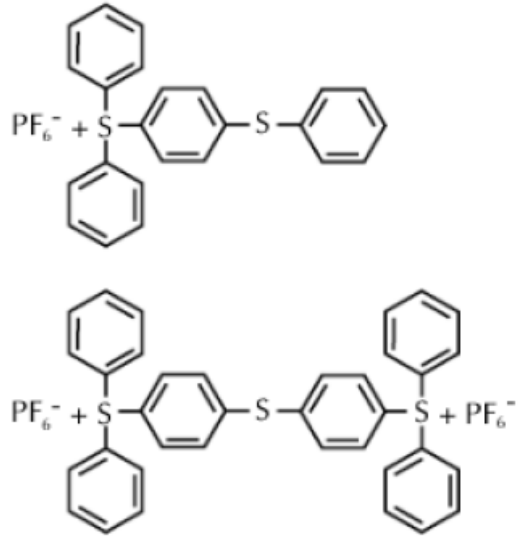


# PAG Series

Product	Chemical Structure	Feature	Application
TPS-PFBS		Appearance: white solid Purity: ≥99.90% Metal Ion: ≤10ppb Acidity: ≤1ppm	KrF resist
DTBPI-PFBS		Appearance: white solid Purity: ≥99.90% Metal Ion: ≤10ppb Acidity: ≤2ppm	KrF resist
TPS-Cl		Appearance: white solid Purity: ≥99.90%	Intermediate of KrF resist
TPS-I		Appearance: white solid Purity: ≥99.90%	Intermediate of KrF resist
DTBPI-Cl		Appearance: white solid Purity: ≥99.80%	KrF resist
PHS Monomer		Appearance: Light yellow or colorless liquid Purity: ≥99.90% Metal Ion: ≤25ppb	Monomer of KrF resist polymer

# Cationic Photoinitiators



Mixed Triarylsulfonium Hexafluorophosphate Salts

## Cationic PIs:

- No Oxygen inhibition
- Low film shrinkage
- Good adhesion to different kinds of substrates
- High abrasion and scratch resistance
- High chemical resistance

## Cationic Monomer:

Oxetane

- Increase curing speed
- Increase conversion rate and polymerization degree

## Functional cationic PIs:

Low migration

High reactivity

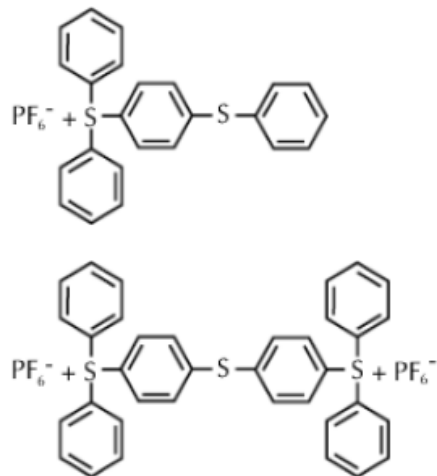
Non yellowing

Long wavelength absorption

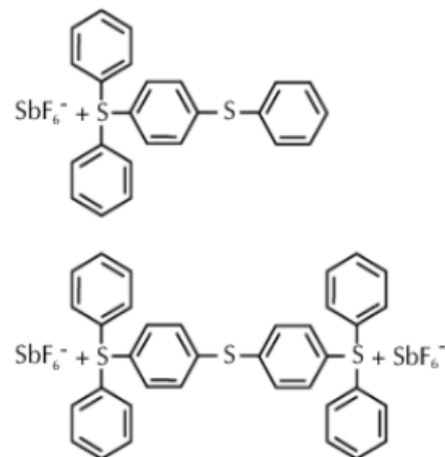
High solubility

# Cationic Photoinitiators

## TRIARYL-Sulfonium Salts



Mixed Arylsulfonium Hexafluorophosphate Salts  
TR-PAG-20001



Mixed Arylsulfonium Hexafluoroantimonate Salts  
TR-PAG-20002

Product name	Counter Grade	UV absorption Peaks / nm	Appearance in Solid	Appearance in Liquid (PC dilute)	Application
TR-PAG-20001	Dow 6992 IGM 432	300 (260~350nm)	white powder	Clear light yellow	Coating for metal, plastics, glass, paper, wood, 3D printing, packaging, overprint varnish
TR-PAG-20002	Dow 6976 IHT-PI436 IGM 320	300 (260~350nm)	white powder	Clear light yellow	

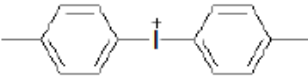
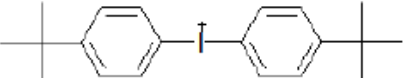
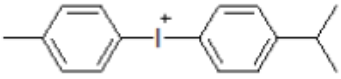
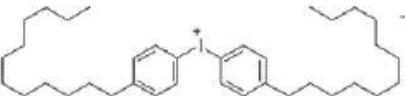
# Cationic Photoinitiators

## TRIARYL-Sulfonium Salts

Product name	CAS No.	Counter grade	UV absorption peak/nm	Appearance	Characteristics
TR-PAG-20001H	68156-13-8 74227-35-3	<b>Dow 6992</b> <b>IGM 432</b> <b>IHT-PI 432</b>	300	powder/Liquid	High purity, halogen free
TR-PAG-20002H	71449-78-0 89452-37-9	<b>Dow 6976</b> <b>IGM 320</b> <b>IHT-PI436</b>	300	powder/Liquid	High reactivity, high purity and halogen free
TR-PAG-20101	75482-18-7	-	300	powder/Liquid	High solubility
TR-PAG-20102	71449-78-0	-	300	powder/Liquid	High solubility, high reactivity
TR-PAG-20301	N/A	<b>BASF 270</b>	300	powder/Liquid	Non yellowing
TR-PAG-21608	N/A	<b>BASF 290</b>	300	White powder	Borate salts, very high reactivity
<b>Applications</b>	Epoxy coating system Surface curing, Thick film and Highly pigmented cationic system, 3D printing				

# Cationic Photoinitiators

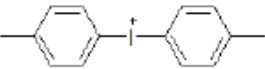
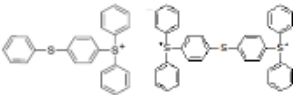
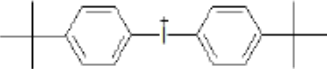
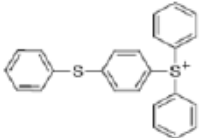
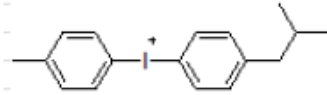
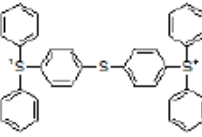
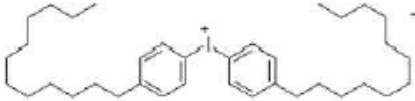
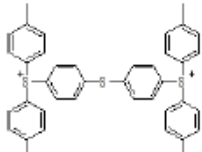
## DIARYL-Iodonium Salts

Product name	Chemical Structure		Counter grade	UV absorption peak/nm	Appearance	Characteristics
	Cation	Anion				
TR-PAG-30101		$\text{PF}_6^-$	IGM 440	240	White powder	Good solubility, high reactivity
TR-PAG-30201		$\text{PF}_6^-$	IGM 440	240	White powder	Good solubility, high reactivity
TR-PAG-30202		$\text{SbF}_6^-$	N/A	240	White powder	Good solubility, high reactivity
TR-PAG-30208		$(\text{C}_6\text{F}_5)_4\text{B}^-$	N/A	240	White powder	Good solubility, high reactivity
TR-PAG-30401		$\text{PF}_6^-$	BASF 250	240	White powder	Good solubility, high reactivity
TR-PAG-31102		$\text{SbF}_6^-$	N/A	240	Light yellow liquid	Low migration
Application	Thick and Highly pigmented cationic system, 3D printing					

# Cationic Photoinitiators

## Sulfonium/Iodonium

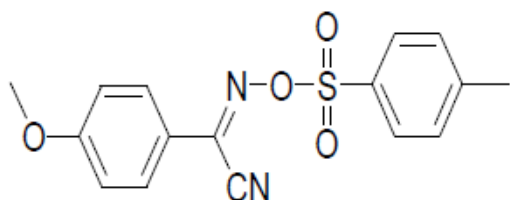
We offer proprietary products tailored for our clients' performance requirement.

No	Cation Iodonium	No	Cation Sulfonium	No	Anion
301		200		01	$\text{PF}_6^-$
302		201		02	$\text{SbF}_6^-$
303		202		03	$\text{CF}_3\text{SO}_3^-$
305		216		08	$(\text{C}_6\text{F}_5)_4\text{B}^-$

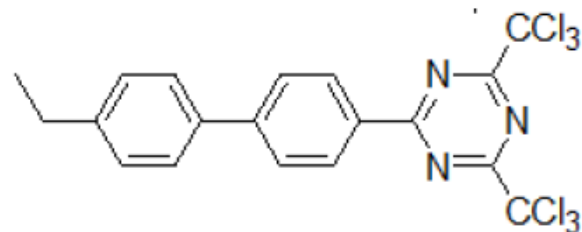
$\text{HB}(\text{C}_6\text{F}_5)_4 \cong \text{HSbF}_6 > \text{HPF}_6 > \text{HBF}_4 > \text{CF}_3\text{SO}_3\text{H} > \text{H}_2\text{SO}_4$  Higher acidity anion performs higher reactivity.

# Photo-Acid Generator

Non-ionic



Oxime Sulfonate series  
TR-PAG 40507



Triazine Series  
TR-PAG 102

Product name	Counter grade	UV absorption Peaks / nm	Appearance	Melting Point / °C	Application
TR-PAG 40507series	-	400-450	Light yellow powder	92-93	Generating alkyl sulfonic acid. Higher photo sensitivity , good heat stability , high solubility and low volatility. near-UV and long-wavelength absorption.. LCD color filter, PCB dry film
TR-PAG 102 series	-	320-400	Off-white powder/crystal	136~190	